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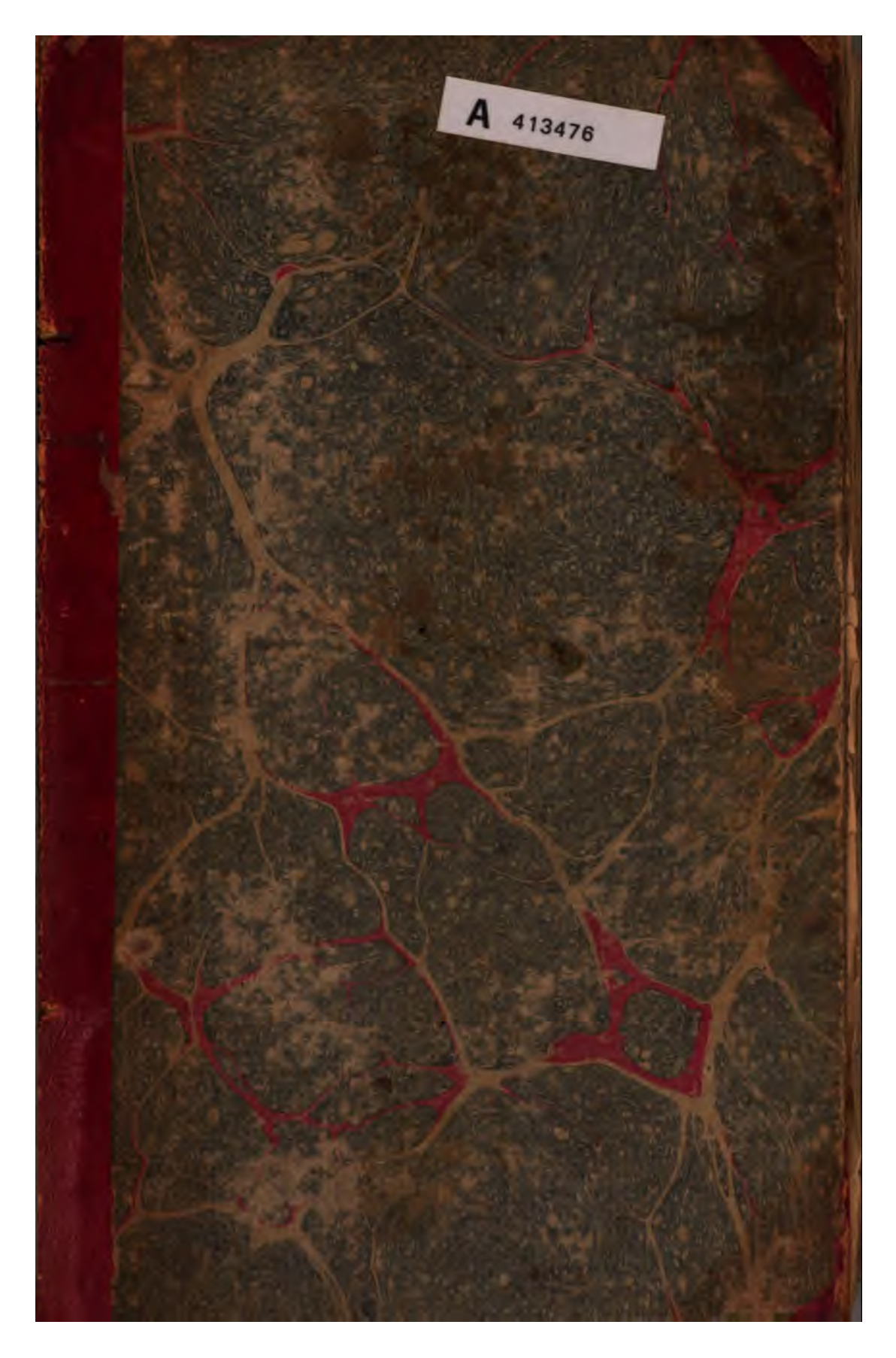
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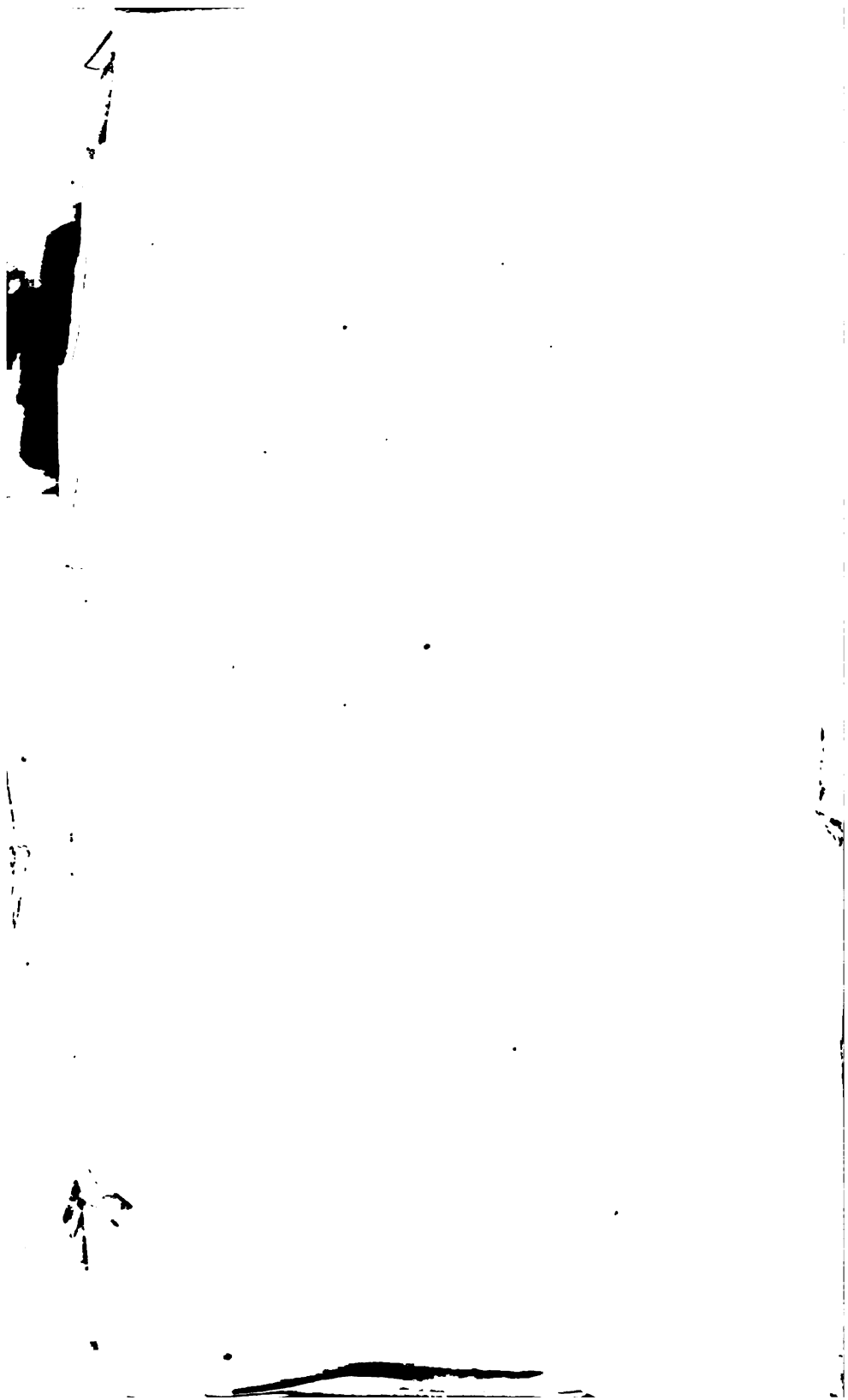




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THE  
**MEDICAL AND PHYSICAL  
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CONTAINING THE  
EARLIEST INFORMATION ON SUBJECTS  
OF  
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PHARMACY, CHEMISTRY,  
AND  
NATURAL HISTORY;  
AND A  
CRITICAL ANALYSIS OF ALL NEW BOOKS  
IN THOSE  
DEPARTMENTS OF LITERATURE.

CONDUCTED BY

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**VOL. I.**

**FROM MARCH TO JULY, 1799.**

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## PREFACE.

**I**N forming the plan of a *Medical and Physical Journal*, two essential objects have naturally engaged the attention, and directed the efforts of its conductors.

The first and preliminary consideration, was that of rendering it a respectable vehicle for those discoveries, improvements, and medical cases, which either required to be speedily laid before the Public, or which, not being of sufficient importance to be published separately, might, without such an opportunity, be consigned to oblivion.

The second, and a motive no less cogent, was that of collecting and condensing those hints and improvements which are constantly issuing from the presses of Europe and America; and which, being scattered in voluminous and expensive works, would be lost to the greater number of medical practitioners.

Whether these two objects, so essentially involving the merits, as well as the success of the present undertaking, have in sufficient degree been attained, we submit to the decision of the candid and unprejudiced reader.

Liberal support by numerous and respectable correspondents, the conductors believe that their publication has had the merit of exciting the attention of the student, and a general spirit of investigation, among medical and physical enquirers, and at the same time it has been the means of diffusing no little variety of instructive and valuable information. And as it is the primary object of a periodical work, that it should become a centre of communication, the conductors congratulate themselves on the very flattering and unexampled testimonies of favour they have received, by the regular and abundant supply of original articles, equally instructive and valuable.

Improvements in science are naturally progressive: and in medicine, surgery, and pharmacy, this progress must be slow, on ac-



## P R E F A C E.

count of the caution with which new experiments are received, and of the great difficulty of distinguishing between fact and preconceived opinion.

The present volume will be found to contain, among other important articles, an accurate and comprehensive account of one of the most interesting physiological facts recorded in the history of medicine, viz. the perpetual means of superseding one disease by the introduction of another, and the discovery of the origin of contagious diseases, evinced in the *Inoculation of the Cow-pox*.

The botanical and chemical articles are numerous and valuable; but we shall particularly mention only the elaborate and curious essay on the *Chemical Analysis of Vegetables*, from the able pen of Dr. HERMBSTAEDT, of Berlin.

In the departments of anatomy and surgery, we have not hitherto been so fortunate as in the other branches of medical science; yet we are not without the hope of supplying this deficiency in our future numbers. The history of anatomy, perhaps the most essential, if not the most necessary part of medical study, we shall endeavour to illustrate from the classical papers of Professor SPRENGEL, of Halle; and from the discoveries lately made by SOEMMERING, MECKEL, WALTER, and LODER, four of the most ingenious foreign anatomists of the present period.

In the *practical* department of pharmacy, we, without hesitation, promise our readers a rich harvest, as we are already in possession of a considerable quantity of new and valuable facts, tending to improve that essential branch of medical practice.

In a word, the conductors are sanctioned in the belief, that the execution of the work has not fallen short of their professions, and of the expectations excited, by the extraordinary extent of circulation which it has obtained—a circulation far greater than that of any former medical work published in this country.

London, June 29, 1794.

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N. B. That the third volume may begin with the commencement of the year 1800, it has been judged expedient to limit the two first volumes to five numbers each.

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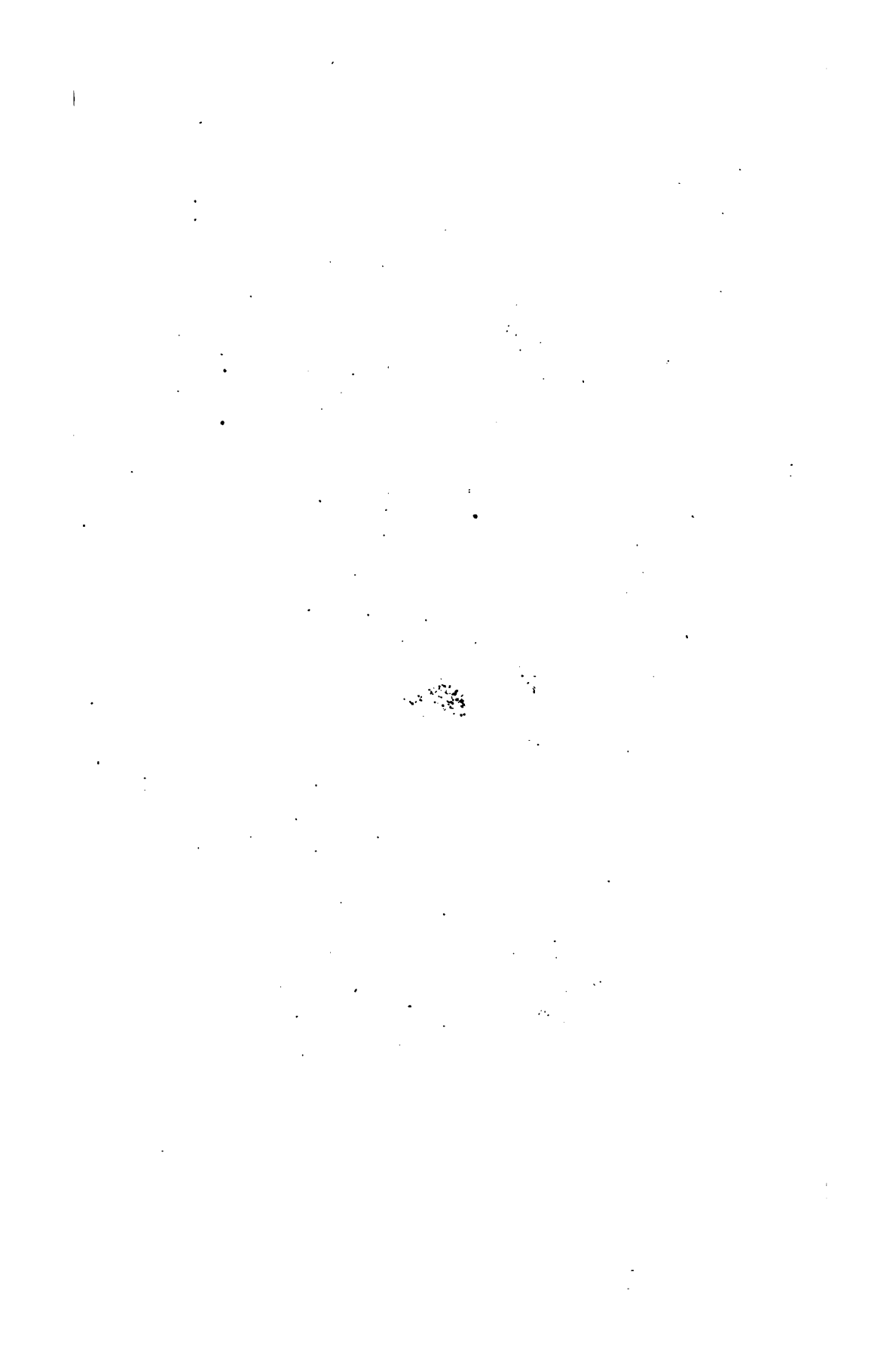


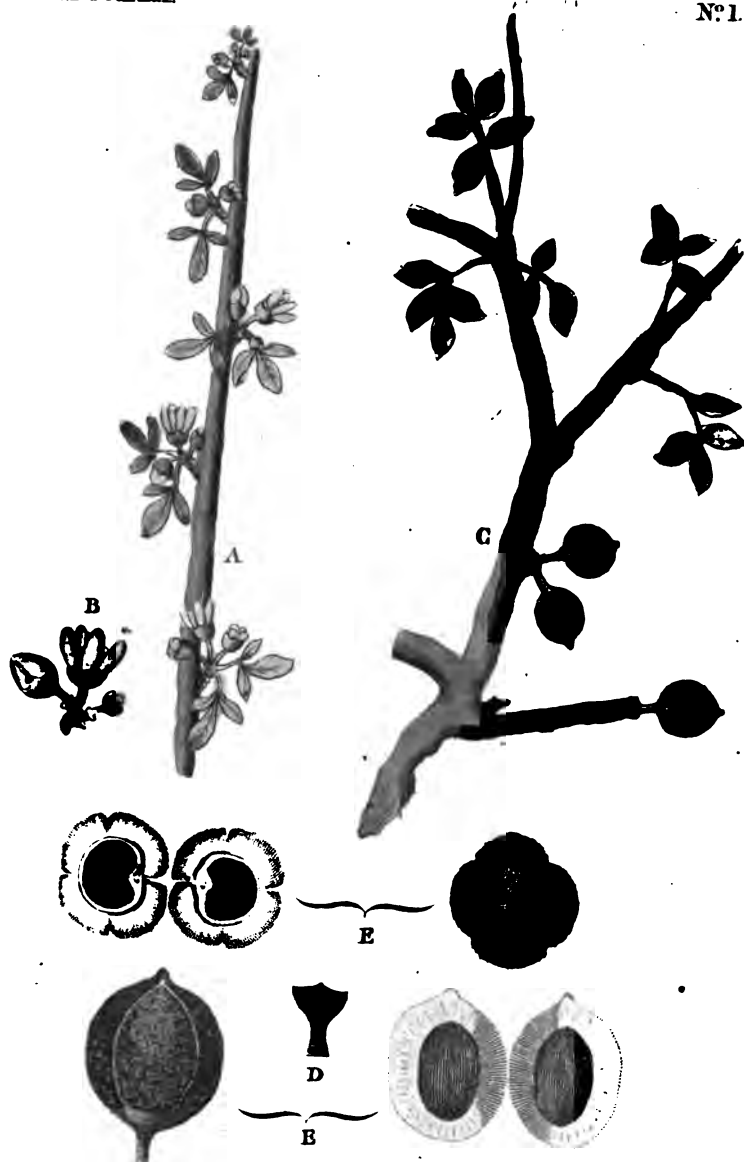
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*Amyris gileadensis*

THE  
*Medical and Physical Journal.*

VOL. I.]

MARCH, 1799.

[NO. I.]

*An Account of the Publications and Experiments on the Cow-pox; illustrated by a coloured plate, which exhibits the appearance of the Eruption on the arm of a Milker on the tenth day of the Disease. The Pock on the Forefinger represents the appearance of a Vesicle before suppuration begins. By Dr. BRADLEY.*

**T**O trace the origin of diseases which at present can only be propagated by contagion; or to supersede one disease by inducing another, would by our forefathers have been deemed problems, the solution of which was too difficult to be attempted by human abilities. Our cotemporaries think otherwise, and persuade themselves that they have done more than attempt the solution. From the first appearance of the *small-pox*, it has with reason been considered, in its natural progress, as one of the most formidable of the frequent maladies to which human beings are exposed; SYDENHAM, by the judicious manner of treating it which he introduced, contributed greatly to diminish its ravages; and the practice of inoculation has so far reduced the number of its victims\*, that where it can be employed, the small-pox is scarcely so much dreaded, as the measles or scarlet fever.

There are some particular families, however, in which even the inoculated small-pox seldom fails to prove a formidable disease; and we are sorry to observe, that in many parts of this island, the prejudice against inoculation, especially among the lower ranks of people, is far from being subdued; nay, even many persons in the higher classes are by no means convinced, when inoculation is employed in private families, that the disease is completely under medical controul. Many are persuaded that the small-pox, even when mild, not only changes the texture of the skin and injures the complexion, but also calls the latent seeds of struma into action. If, therefore, any means could be discovered of superseding it, without incurring equal danger, it might naturally be expected that many parents would be desirous of taking advantage of them. This appeared

\* Some are of opinion that inoculation, by keeping the small-pox always epidemic, has increased its fatality; but this conclusion appears to be drawn from insufficient premises.

appeared to be the case, in a very unequivocal manner, on the first publication of Dr. JENNER's work on the cow-pox, in June, 1798; for not only many persons of distinction, but several medical men who rank high in the profession, immediately discovered an earnest desire to have their children inoculated with the cow-pox matter as soon as possible, from the evidence of safety and efficacy in preventing the small-pox, which was contained in Dr. Jenner's book alone. This evidence we shall proceed to lay before our readers. But it is proper, in the first place, to observe, that although Dr. Jenner does not claim the discovery of the cow-pox, or the effects of it, in preventing the small-pox, when taken naturally, yet he is undoubtedly intitled to all the merit and honour of having brought the subject of inoculating it, completely before the public, and directed the attention of the profession, in general, to an investigation of its truth and importance.

Dr. Jenner's book is a small quarto of seventy-five pages, illustrated by four coloured plates, representing the appearance of the cow-pox, in the human subject: price 7s. 6d. Published in London, by LAW.

The author introduces his "*Enquiry into the causes and effects of the cow-pox*," by observing, that the deviation of man from the state in which he was originally placed by nature, seems to have proved to him a prolific source of diseases. From the love of splendor, from the indulgences of luxury, and from his fondness for amusement, he has familiarized himself with a great number of animals, which may not originally have been intended for his associates.

Those domesticated animals, he observes, do not always affect the human race directly, as rabid ones often do; but sometimes they affect each other primarily, and the modified disease becomes capable of producing a specific action on man in a secondary way, which the original could not have produced. This is exemplified in what farriers term the *grease* in the heels of horses, the matter of which applied to the cow produces the cow-pox, "and this is capable of generating a disease in the human body, which bears so strong a resemblance to the small-pox, that I think it highly probable it may be the source of that disease." p. 2.

The matter of grease is applied to cows by men who have the care of horses being employed to assist the maid servants in milking. "The disease is thus communicated to the cows, and from the cows to the dairy-maids, which spreads through the farm, until most of the cattle and domestics feel the unpleasant consequences."

The author thus describes the

SYMPTOMS IN THE COW.

" Irregular pustules appear on the nipples of the cows, which at their first appearance are commonly of a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation."

These pustules, unless a timely remedy be applied, frequently degenerate into phagedenic ulcers, which prove extremely troublesome.

The animals become indisposed, and the secretion of milk is much lessened.

SYMPTOMS IN THE HUMAN SUBJECT.

While the cows are in the state last mentioned, inflamed spots begin to appear on different parts of the hands of the domestics employed in milking, and sometimes on the wrists, which quickly run on to suppuration, first assuming the appearance of the small vesications produced by a burn.

Most commonly they appear about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form, with their edges more elevated than their centre, and of a colour distantly approaching to blue.

Absorption takes place, and tumours appear in each axilla. The system becomes affected; the pulse is quickened; and shiverings, general lassitude, and pains about the loins and limbs, with vomitings, supervene.

The head is painful, and the patient is now and then even affected with delirium. These symptoms, varying in their degrees of violence, generally continue from one day to three or four, leaving ulcerated sores about the hands, which, from the sensibility of the parts, are very troublesome, and commonly heal slowly, frequently becoming phagedenic, like those from whence they sprung.

The lips, nostrils, eye-lids, and other parts of the body, are sometimes affected with sores; but these evidently arise from their being needlessly rubbed or scratched with the patient's infected fingers. No eruptions on the skin have followed the decline of the feverish symptoms in any instance that has come under my inspection, one only excepted, and in this case a very few appeared on the arms: they were very minute, of a vivid red colour, and soon died away, without advancing to maturation; so that I cannot determine whether they had any connection with the preceding symptoms. Thus the disease makes its progress from the horse to the nipple of the cow, and from the cow to the human subject. What

renders the cow-pox virus so extremely singular is, that the person who has been thus affected is for ever after secure from the infection of the small-pox. In support of so extraordinary a fact, I shall lay before my reader a great number of instances.—Page 7.

Dr. Jenner then details twenty-three cases, tending to prove the foregoing opinions respecting the origin of the cow-pox, and the impossibility of the small-pox following it, provided the patient had the symptomatic fever *during the cow-pox*.

Dr. Jenner assures his readers, that the utmost care was taken to ascertain, with the most scrupulous precision, that no one whose case he adduces, had gone through the small-pox previous to his experiments; and as he lived in a part of the kingdom where population is comparatively thin, no risk of inaccuracy in this particular can arise.

In several of the cases adduced by Dr. Jenner, the patients had laboured under the cow-pox upwards of thirty years previous to the time when inoculated with variolous matter, in order to shew that the change produced in the constitution by the former is not less permanent than that by the latter.

Some of these cases are intended to prove, that persons who have had the small-pox are susceptible of the cow-pox only in a slight degree.—Page 17, &c.

At p. 21, the author observes, that although the cow-pox shields the constitution from the small-pox, and the small-pox proves a protection against its own future poison, yet it appears that the human body, as well as cows, are again and again susceptible of the infectious matter of the cow-pox, as appears by the history he there adduces.

At p. 27, a case is related, where a farrier had taken a disease from the heels of a horse, and could not afterwards be infected by variolous matter. The author takes this occasion to observe, that smiths, who in the country are also farriers, are more difficultly infected by inoculation than other people; and asks, “ Shall we not be able now to account for this on a rational principle ? ” He concludes, however, immediately after, that the disease derived from the horse is a very inferior security to that from the cow.

After several cases, tending to evince the similarity between the eruption and indisposition, as well as power of perpetuating the disease, following the infection of vaccine and variolous matter, Dr. Jenner, at p. 41, mentions the application of a mild caustic, composed of equal parts of quick-lime and soap, to the inoculated part, in order to diminish the erysipelatous inflammation; which often takes place upon the arm, soon after the patient has sickened. He informs us that it effectually answered his intention, in preventing

ing the appearance of erysipelas. Indeed, it seemed to do more, for in half an hour after its application, the indisposition of the children ceased. What effect would a similar treatment produce in inoculation for the small-pox?

Dr. Jenner concludes his inquiry with some general observations on the certainty of the inferences which he has drawn from his cases, his own observations, and those of his friends. He considers them as demonstrated, as far as such inferences can be demonstrated by an individual, whose experiments have been exclusively confined to one part of the kingdom.

We think it both natural and desirable, that all those who attempt to overturn established opinions, should be somewhat more sanguine than the generality of their readers. This enthusiasm seems necessary to procure attention, as well as to excite opposition.

Dr. Jenner does not think the cow-pox communicable from one person to another by any other means than by inoculation of the matter (p. 68). He hints, that some chronic complaints may probably receive relief from the febrile attack of cow-pox, which is *never attended with danger*.

"Thus far," says Dr. Jenner, "have I proceeded in an inquiry, founded, as it must appear, on the basis of experiment; in which, however, conjecture has been occasionally admitted, in order to present to persons well-situated for such discussions, objects for a more minute investigation. In the mean time, I shall myself continue to prosecute this inquiry, encouraged by the hope of its becoming essentially beneficial to mankind."

The next work on this subject which demands our attention, is an 8vo. pamphlet of 116 pages, by Dr. PEARSON, Nov. 1798, intitled, "*An Inquiry concerning the History of the Cow-pox, principally with a view to supersede and extinguish the Small-pox.*" Published by JOHNSON.

This inquiry is prefaced by Dr. Pearson with the following among other observations, respecting his motives for publishing at that time. See p. 1, 2, 3.

"In the work just spoken of, (Dr. Jenner's) several facts are related, which seem to let new light into the nature of the animal economy, and to exhibit a near prospect of most important benefits in the practice of physic. But as some of these facts do not accord, nay, as they are at variance in essential particulars with those to which they are nearest related, the truth of them is rather invalidated than confirmed by analogy; hence the testimony of a single observer, however experienced, and worthy to be credited, it is apprehended, is insufficient for procuring such facts a general acceptance. But granting that the facts should be generally ad-



mitted without hesitation to be true, in the above work, the more judicious part of the medical profession will require the observations to be derived from much more extensive and varied experience, in order to appreciate justly, the value of the practical conclusions. Hence there appears little likelihood of improvements in practice being made, unless the subject be investigated by many inquirers, and the attention of the public at large be kept excited. Agreeably to the preceding representation, I go forward to examine the evidence of the principal facts asserted in the publication on the cow-pox; and to state what farther evidence I have derived from my own experience, and from the communication of a number of professional gentlemen, of unsuspected veracity, and undoubted accuracy."

"Perhaps it may be right to declare, that I entertain not the most distant expectation of participating the smallest share of honour, on the score of discovery of facts. The honour on this account, by the justest title, belongs exclusively to Dr. Jenner; and I would not pluck a sprig of laurel from the wreath that decorates his brow."

To the above statement of Dr. Pearson's motives for publishing, we think it right to add those considerations contained in Dr. Jenner's letter to Dr. Pearson, dated 27th Sept. 1798.

"My dear Sir,—the perusal of your proof sheets has afforded me great pleasure, both from the handsome manner in which you mention my name, and from the mass of evidence which has poured in upon you from different counties, in support of the facts which I so ardently wish to see established on a steady and durable basis." p. 99.

In order to direct the public attention to the most important objects of investigation, as well as to place them in the strongest light, Dr. Pearson has comprised the principal facts in a series of propositions, to each of which he subjoins all the information which he had then received, both from his own observation and personal inquiries, as well as the communications of his numerous correspondents: we shall lay the substance of these propositions before our readers, without adhering to the precise words.—The first proposition is to this effect: See p. 4.

1. *The cow-pox communicated in the accidental or natural way, (i. e. from the teats of the cow to the hands of the milkers,) renders the persons who experience the specific fever, &c. of that disease, incapable of ever receiving the small pox.*

To the facts adduced by Dr. Jenner, in support of this important proposition, from p. 9, to 26, Dr. Pearson adds a great number of others  
from

from p. 5 to 37, not one of all which militates in the smallest degree against it. This uniform consent, derived from such a variety of sources, will probably with many, be deemed equivalent to demonstration. Dr. Pearson, however, does not think any practical fact of such importance sufficiently established, till we have at least a thousand well attested cases in favour of it.

From the communications contained in this part of the work, as well as several others, it appears that the cow-pox is only known in a comparatively few counties of this island.

2. The second proposition, p. 37. "*The cow-pox communicated by inoculation renders the persons who are affected with the specific fever, and peculiar local disease, unsusceptible of the small-pox.*"

This proposition involves the important fact, which, we all agree with Dr. Jenner, in wishing to see established on a steady and durable basis.

To the cases adduced by Dr. Jenner, Dr. Pearson has added a considerable number of others, from p. 37 to 42; and we can assure our readers, that every week is now teeming with experiments calculated to reduce this matter to a certainty. When the result of these can be sufficiently ascertained, we shall lose no time in laying it before the public.

3. *The matter of the cow-pox, whether taken from the brute or human body, produces the same disorder by inoculation, and with the same certainty; and when several persons have been inoculated from each other in succession, such removal from the original source of the matter, produces no change in the nature or appearance of the disease.*

This appears to be only a branch of, or appendix to, the second propositions; for unless these conditions are also proved to be true, it is obvious that the means here intended to be recommended for superseding or extinguishing the small-pox can never be extensively employed. We are therefore sorry to add, this important fact at present is only supported by the instances related by Dr. Jenner.

No experiments have yet been published, which prove that the disease may be communicated by *inoculation* from the human subject to the cow; and Dr. Pearson adds, "I apprehend that the cow-pox is the only example at present known, of a permanent specific infectious disease in the human constitution, produced by matter from a different species of animal; but it has often been conjectured, that many of the infectious diseases of the human species are derived from brutes."

Dr. Jenner suggests a caution respecting the *state* of the matter employed in inoculating, and thinks, that after it has lost its limpid quality,

its specific effects also cease. "Much precaution, says he, is therefore necessary in the progress of the inquiry; and this is my grand fear, that the discovery may fall into discredit from a want of that attention, in conducting the experiments, which the subject requires. For example, a person may conceive he has the cow-pox matter on his lancet, when in fact, there may be only a little putrid pus;—with this he inoculates, and excites a disease of some kind, but not such a one as will prevent the small-pox. Thus a delusive inference would be drawn, at once hurtful to the cause, and particularly injurious to me. However, truth must appear at last, and from your researches its appearance will certainly be expected." See letter to Dr. Pearson.

4. *The cow-pox may occur in the same man or brute repeatedly, if the matter of it be applied to them, though both are equally unsusceptible of the small-pox.* p. 43.

This proposition appears to be received with general scepticism by the profession, merely on account of its improbability. But, surely, improbability is lighter than a feather, when put into the balance against fact and observation. All the circumstances respecting the cow-pox, contained in the foregoing propositions, are no less improbable than this. Dr. Pearson supports the fact both by arguments and additional examples, from p. 44 to 48.

5. *A person who has been affected with the small-pox, may nevertheless take the cow-pox.*

The evidence in favour of this proposition, is not at present decisive, p. 49.

6. *The cow-pox cannot be communicated by any other means than by the actual contact of the matter of a pustule.*

Some contagions appear to be conveyed in the form of gaseous fluids, as those of intermittents, scarlet fever, measles, whooping-cough, &c. Other morbid poisons are communicated, both in the state of effluvia, and in a palpable or visible form, as the variolous poison, the murrain in cattle, &c. Others again in the palpable or visible form only, as the hydrophobic, syphilitic, and now may be added, the poison of the cow-pox. The proofs of this proposition, p. 51, 52, appear satisfactory.

Thus far the means of communicating the cow-pox to the human species, and of perpetuating it there, as well as the amount of the proofs of the possibility of superseding the small-pox, by the introduction of it, have been submitted to our readers. The next question which demands our attention is,

7. *Is the cow-pox a shorter, safer, or pleasanter disease, than the inoculated small-pox, when conducted in the most approved manner?*

Unless

*Dr. Bradley, on the Cow-Pox.*

Unless the affirmative of this question be made out to the satisfaction of the public in general, we conclude that the subject of this inquiry must be deemed rather curious than useful; as few parents would be found willing to expose their children to a severe disease, for the purpose of avoiding a mild one.

Dr. Jenner and Dr. Pearson appear to be convinced that the cow-pox is the milder and safer of the two, as no instance has ever occurred of a person dying or even being in danger from it.

On the other hand, some of Dr. Pearson's correspondents seem to think that the cow-pox is far more severe than the inoculated small-pox. Mr. Drew observes, p. 54, that the inoculated small-pox is incomparably milder than the cow-pox. Mr. Fewster says, p. 102, "I think it is a much more severe disease, in general, than the inoculated small-pox. I do not see any great advantage from inoculating for the cow-pox. Inoculation for the small-pox seems to be so well understood, that there is very little need of a substitute. It is curious, however, and may lead to other improvements." These gentlemen appear to have taken up their opinion from a few severe cases, and probably some in which the ulceration on the arms, commonly noticed, was peculiarly distressing, as they take no notice of the *symptomatic fever*, or any disagreeable consequences of the cow-pox. The arguments on the other side we have briefly proposed in our introduction, and a principal one is contained in the following propositions, viz.

8. *The cow-pox never excites or predisposes to other diseases, which the small-pox has too frequently been observed to do.*

The evidence in support of this important proposition, which is only a supplement to the last, is at present defective for want of time and numbers, p. 59.

9. *The cow-pox does not prevent the small-pox, unless the constitution be affected with fever, &c. during the disease.*

If the result of this inquiry should be in favour of the cow-pox, and the public in general should become as desirous of adopting it to prevent the small-pox, as the city of London appeared to be last summer, it will be necessary, that the diagnostic symptoms of the cow-pox should be accurately laid down; and that all danger of confounding it with the chicken-pox, or other cutaneous eruptions, should be prevented.

After the account of the evidence on the subject of these propositions, which Dr. Pearson could obtain at that time, he proceeds to make some observations on the general state of the question.

He

He thinks, as the information has been derived from so great a variety of sources, no suspicion of collusion can arise; and that the plea of the ancient sceptic, in defence of his incredulity, cannot be applied in this case. He was shewn on the walls of a temple, the votive tablets of those who had escaped shipwreck in consequence of the protection of certain deities, to whom they had addressed their vows, and then asked, if he could any longer doubt the power of those Gods? He said, first let me see the tablets of those who *perished* after they had implored the protection of the same Gods.

Since the natural small-pox is known to be very often fatal, and the inoculated not oftener than once in a thousand instances, as appears from the reports of Dr. Woodville and others; and since the *natural* cow-pox has ~~never~~ proved fatal, and the inoculated cow-pox is as much milder than the *natural*, as the inoculated small-pox is milder than the *natural*; and when it is considered that the cow-pox is not propagated in the state of effluvia; we may reasonably conclude, "that there is great probability of the cow-pox either not proving fatal at all, or at most being much less frequently so, than the inoculated small-pox," p. 68.

Independent of the above general inference, Dr. Pearson thinks the "comparison of the two diseases should be instituted with respect to danger under the particular circumstances of pregnancy; age; teething; peculiar morbid states; Idiosyncrasy; and certain epidemical states."

After a comparative estimate of both diseases, in all these respects, Dr. Pearson continues steadfast in his adherence to the above conclusions.

Concerning the *aetiology* of the cow-pox, Dr. Pearson concludes against Dr. Jenner, that it is not derived from the grease in horses, nor does he believe that smiths or farriers are more difficultly infected by variolous matter than other people, p. 84.

Dr. Pearson next suggests a number of other advantages, which may hereafter be derived from a skilful employment of the cow-pox, such as the suspending for a time, and thence often preventing or curing, other epidemic or contagious diseases besides the small-pox, such as the influenza, whooping-cough, angina maligna, &c.

Our author concludes his work with a set of queries "designed to guide observation in the acquisition of facts belonging to the subject of this inquiry." The most important of these are contained in the preceding propositions, and for the others we must refer our readers to the book itself.

The above short sketch will enable our readers to form an idea of those two works, which, whatever superstructure may hereafter be raised, must always be considered as having laid the foundation of it.

In order to continue the history of the subject down to the present time, we announce to our readers, that, about the latter end of December last, the cow-pox broke out among the herds of several milk-farms in the environs of London. The disease spread rapidly, so that at one farm, in the second and third weeks of the following month, viz. January, more than 200 out of about 850 cows were then affected, or had lately passed through the disorder. At another farm, between 60 and 70 cows out of about 350 had the disease. This epizootic contagion disappeared rapidly after the time last mentioned, for, by the 4th of February, not a single cow could be found in such a state as to afford matter for inoculation. The cow-pox in this instance appears to have been very mild, for no loss was experienced by the farmers from the deficiency of milk, as usually happens.

At one of these farms two milkers only contracted the disease, and were affected very slightly; at the other farm only one out of 200 milkers was infected. A number of philosophical and medical gentlemen, the President of the Royal Society, and the Board of Agriculture, &c. visited one of the above farms, to observe the phenomena of the cow-pox, both among the cows and the milkers.

A sufficient quantity of matter was collected, and a number of persons have been inoculated of the age of two weeks and upwards. They all took the disease, and passed through it without being so ill as to be confined a single day; and indeed very few of the patients made any complaint.

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*The signature of the following communication on this subject renders any introductory observations unnecessary.*

*To the Editors of the Medical and Physical Journal.*

THE following extract of a letter from an intelligent gentleman, not of the profession, appearing to me to deserve the attention of medical practitioners, and particularly of those who seem inclined to recommend the general inoculation of the cow-pox, as a preservative from the small-pox, I communicate it, with the hope that it will be inserted in the first number of the Medical and Physical Journal.

“ There is a gentleman of eminence in the law, now living in Bristol, who has had the cow-pox twice, and being afterwards inoculated for the small-pox, had it in so great abundance that his life for some time was despaired of: he describes the cow-pox as the most loathsome of diseases, and adds that his right arm was in a state of eruption both the first and second time from one extremity to the other; the pain was excessive and his fingers so stiff he could scarcely move them. At a time when parents are beginning to talk seriously of inoculating their children with this loathsome and useless disease, the  
above

above statement may not be unacceptable. The gentleman alluded to was the son of a farmer who kept seventy cows, of which he, being then a lad, milked eighteen himself; they were all of them infected with this disorder at one time; he caught it, and such was the abhorrence it created in the family, that they made no use of the milk as long as it lasted. He never heard, nor does he believe, that this complaint in cows originates, as supposed by Dr. Jenner, from any communication with that acrid humour, called *the grease in horses*.

What this gentleman remarks of the loathsomeness of the disease, although a circumstance entirely overlooked in Dr. Jenner's account, appears to be in itself a formidable objection to its introduction, even should it be found to answer the purpose for which it has been recommended. But if, in one case, and that where the patient has been twice so severely afflicted with it, it has already been found to be ineffectual in preserving from the infection of the small-pox, it will surely make us hesitate in recommending the introduction of a hitherto nearly unknown disease. At first sight, indeed, it should seem very improbable that a disease, which has not the power of preserving the constitution from a second attack, should be capable of making such a change in it, as to enable it to resist the infection of a somewhat analogous, but far more violent disease; but the facts and experiments, brought forward by Dr. Jenner, ought certainly to call forth an inquiry, from such medical practitioners as are so situated that they can have it in their power to make real observations on the disease, and its supposed preservative powers; but I can by no means approve of making such rash experiments upon our fellow creatures, as the insertion by inoculation of a variety of acrid animal poisons, the effects of which, upon the individual constitution, no man can, *a priori*, judge of, and who shall say that the individual only shall in all cases be the sufferer? If such hazardous experiments be not discouraged, there is some reason to fear that to the opprobrium the profession already lies under, of not being able to cure many of the existing diseases, will be added, that of having introduced new ones.

*New Bridge-street, Feb. 13, 1799.*

JOHN SIMS.

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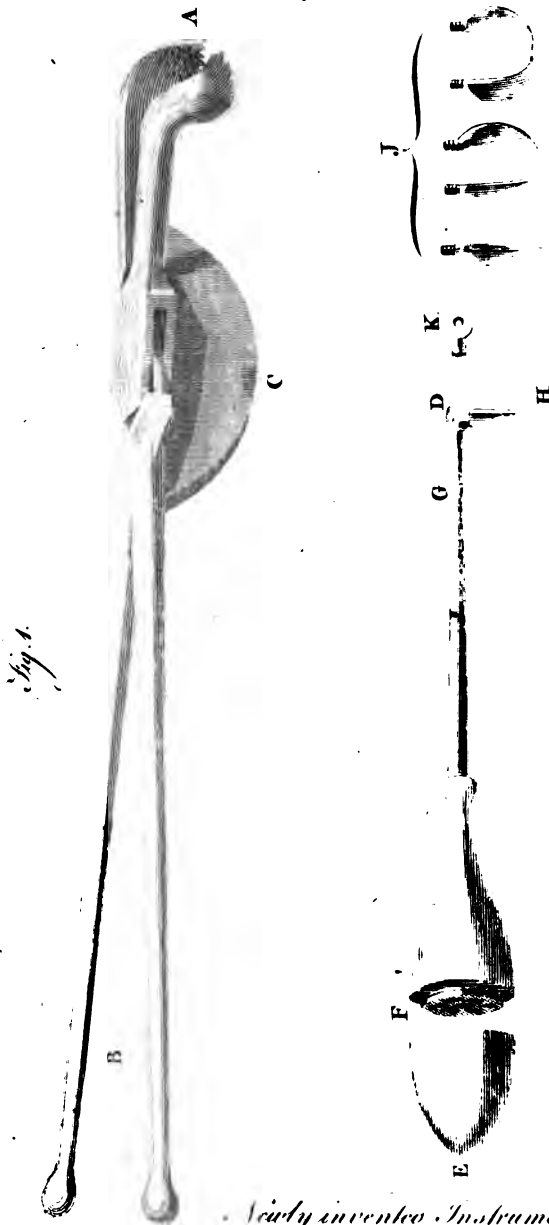
*From the above general statement, our readers will perceive that the great question respecting the utility of the cow-pox is at issue before the public.*

T. B.

*Remarks*







*A newly invented Instrument for the  
Extraction of Teeth:—By W.<sup>m</sup> Lister, M.D.*

*Remarks on the Extraction of Teeth, with a View to lessen the Danger of that Operation; and a Description of a new Instrument for Drawing Teeth; including the Account of an improved Scarificator:—Communicated by Dr. W. DYER, of Aberdeen.*

[ With a Plate. ]

**E**VERY person conversant in the operations of surgery, knows how to extract teeth; but few, comparatively, who perform this operation, consider the danger that attends it. If I wish to draw a nail, (which having been retained for some time in a wall, and, by means of the oxygen contained in the atmosphere, converted partly into an oxide, nearly resembles a carious tooth) I can extract it with the assistance of a common hammer, by fixing the nail between the claw; (this is easily done, as the latter adapts itself to any size, being nearly of the form of the letter V) then forcing the handle to one side, I thereby form a fulcrum on the edge of the hammer, or the side of the claw, and by the power which the long handle or lever affords, I am enabled either to extract the nail, or perhaps to break it; but should there be the least appearance of so doing, I then immediately force the handle to the other side, and on taking another hold, the nail, in all probability, will come out complete or entire. Such is precisely the case with regard to the drawing of teeth; for whenever the pull is too great to venture upon, by changing the claw of the instrument, and fixing it on the other side, the tooth being already loosened by the first attempt, a small degree of force only will be requisite to bring it to the other side, and it will then come out along with the instrument; yet never without some injury being done to the alveolar process. To be convinced that this must be the case, we need only consider the position of the hammer in pulling the nail, as it is more completely exposed to view, both instruments being perfectly similar in their application and principles. On the first attempt to pull, we find that the nail begins to bend to one side; an additional force brings it out a little, but in what direction?—not in a straight line, but a curved one, forming a segment of the circle, which would be described by placing one leg of a compass at the fulcrum, or that part where the hammer rests, and extending the other leg to the nail; then drawing a circle by means of this known radius, the nail when extracted, would exactly correspond with a part of the circumference of the circle drawn. But as the human teeth do not bend, being different in their texture from that of the metal of which the nail is composed; and as the bed or socket in which they are lodged, is likewise different from the wood in which the nail is inclosed,

inclosed, it is not to be wondered at, that one or other of them will give way, considering the short turn which the instrument must, from its construction, describe.

Let us suppose the claw placed (either outside or inside) upon the tooth, with the point of it as near to the gum as possible, the rest or fulcrum also being placed on the opposite side, as near to the jaw as may be without resting upon it, then by taking hold of the handle of the instrument in the right hand, we give it a twist, which we shall suppose brings it out, yet so that one or other of the circumstances already mentioned will take place, viz. the tooth broke and part of the fang retained in the cavity, and if so, the former complaints very often will continue, and sometimes increase beyond endurance, or if the tooth be whole, a considerable splinter of the alveolar process will be brought out along with it.

These inconveniences, not to mention the great pain and dangerous consequences that frequently ensue, have not passed unnoticed by professional men, in every country where the key instrument has been in use—an instrument too well known to require a description here, as no person capable of judging of its imperfections can be ignorant of its construction. The instrument used a century ago for the same purpose does not materially differ from the one at present in use; it no doubt has undergone a variety of forms, but the principle remains the same. Among the numerous attempts to improve it, the only one, not materially different from the old instrument, and which merits particular notice, is that proposed by Mr. SAVIGNY, surgical instrument maker, in London, and described in the 7th volume of “*Medical Facts and Observations.*” That gentleman has certainly heard many complaints, and is himself well qualified to judge of the imperfections of the old instrument, but the improvement which he wishes to introduce, (consisting of a small cylinder or bolster on the end of the instrument, placed on the tooth as near to the process as possible, the claw being fixed to the circumference of this cylinder) by no means performs what he intends or says, viz. “the extraction of the tooth in nearly a perpendicular direction.”

A trial of the instrument is scarcely necessary to prove this; a simple inspection of the plate may suffice to convince us that the end proposed is not here attained, and also that his instrument is not materially different from the common one, either in its direction, or power of action. In a late publication (the “*Philosophical Magazine*”) I read with great satisfaction the announcement of a description and plate of a new German key for extracting teeth, in hopes that it would effectually supersede any attempt of mine towards improvement, or at least, that I should receive from it such additional information as would enable me perhaps to improve my own; but now, after having examined the plate and read the

the description, I am concerned to find that not one improvement is even attempted. An instrument exactly similar to the one here mentioned, I have not only seen many years ago used by others, but I have also actually used myself—perhaps it may be new to its recommender; it can scarcely be so, however, to an experienced medical practitioner. He says, “the improvements introduced into this instrument are such as, I hope, will be found to remedy the defects complained of in all former ones; and the facility with which a tooth can be drawn by its means, will, I am sure, render its adoption in practice universal, as soon as it shall be generally known.” In opposition to which I am sorry to observe, that the imperfections of this instrument have been too long known and felt, not to enable us to decide whether it correspond in efficient practice to the encomiums he is pleased to bestow on it. It is scarcely necessary to mention, that the only advantage which this instrument possesses over those in common use, is the short time that is required in changing the claw from one side of the tooth to the other; but this is not always necessary, and it is only an additional expence to the price of the instrument, without producing any advantage equivalent thereto. The principal objection to it, and the disagreeable consequences that ensue from the use of all other instruments, which have been contrived for extracting teeth, is certainly the following; the short lateral turn or curve which the instrument describes when in action:—But how is this to be remedied? We can easily find out imperfections, and yet the means hitherto employed for the removal of them have not been attended with that success, which the importance of the object deserved. All who have considered the common key instrument, or indeed any one with which we have been yet made acquainted, will agree, that the sudden turn, described by the tooth or instrument while extracting, occasions most of the inconveniences attending the operation: when this is known, the practitioner will naturally say to himself, the main thing required is to pull the tooth in a perpendicular direction, or rather in the direction of its axis; but when again we come to consider how this is to be done, a question occurs, what instrument can be used, which will have sufficient power, and yet be applicable in so confined a situation? The solution of this seems insurmountable.

Several ingenious men have attempted to master the difficulty, but none, as I know, have been successful, and although I am inclined to think that what I have to propose will answer the intended purpose, perhaps I may be deceived; and if I should, it affords me some consolation to reflect that in this respect I am not singular: and I sincerely wish and hope that the hint may be, by some person of ingenuity, applied with more advantage and neatness to the purpose intended.

We

We have already considered the inconveniences attending the use of the key instrument as commonly applied, by its sudden turning the tooth to one side; what we have now to consider is, whether it be possible to extract it in the direction of its axis, or in a perpendicular direction, and in what way? If we again consider how the hammer is employed in extracting a nail in another direction, we shall at once conclude, that another instrument, or at least one constructed on different principles, will be requisite for that purpose. If I wish to pull the nail in a more perpendicular direction, fix it first in the claw, then by causing the end or solid part of the hammer to rest upon the wall, I do not force it to one side, but pull exactly in the direction of the claw, by which means the nail is raised nearly in a perpendicular direction, or rather in the direction of a segment of the circle formed by the point of the claw of the hammer where the nail rests, taking the solid part or other end of it, where the fulcrum is, for the centre. In nearly a similar way, would I propose teeth to be extracted; the instrument, however, for this purpose will be best understood from the annexed drawing.

A B represents the instrument nearly of its proper size, and resembles in a great measure the common stump forceps; attached to the forceps at C is a semi-circular piece of wood or metal, the under part of which is stuffed and covered with leather: this semi-circular piece is so constructed that it may be slipped off at pleasure, and a larger or smaller one adapted, as the case may require; whenever this instrument is to be used, it is requisite, in the first place, to observe that there be no vacancy between the tooth to be extracted and the front teeth: then, having previously well separated the gum from the tooth, the point of the instrument is to be applied on each side of the tooth as low down, and taking as firm a hold of it, as possible; then by depressing the handle, at the same time taking care not to lose hold of the tooth, the semi-circular piece rests upon the anterior teeth, and forms a fulcrum, yet it produces a very different effect at the point of the instrument, which a common prop would do; for by means of it, the tooth when raised, describes, not the circle which would be formed by taking the distance between the point of the instrument and the fulcrum, but one that is of a much larger radius; which of course comes nearer the direction wanted, the perpendicular. I am well aware, that one great objection will be offered to the use of this instrument, and that is, in cases where one, two, or three teeth are wanting, and where there is nothing to rest upon but the gum; even in such cases, this inconvenience may be easily obviated by having a flat piece of metal with a small handle attached to the side; this flat piece being stuffed in the under side and covered with leather, should be placed

placed upon the gum; then the semi-circle of the instrument rests upon it as upon the teeth, and in this way the instrument may be used with as much facility in the one case as in the other.

The force necessary to draw a tooth is not so great as one would be apt to imagine, provided the cords (if I may be allowed so to call the gum) be completely separated from the tooth, which by the bye is seldom done by any operators.—Indeed, most persons that are in the practice of extracting teeth, complain of the difficulty of dividing the gum from the tooth completely; and a very eminent writer\* on this subject says, “It is a common practice to divide the gum from the tooth before it is drawn, which is attended with very little advantage, because at best it can only be *imperfectly done*;” and he adds, “But if such a separation, as can be made, saves any pain in the whole of the operation, I should certainly recommend it, and at least, in some cases, it might prevent the gum from being torn.”—Now what I wish to advance on this subject is to endeavour to point out a method of performing this part of the operation *completely*; for the author above quoted certainly does not mean to affirm that it is useless, but only that the method at present in use does not answer the intention. If we examine any of the scarificators commonly used for the purpose, we shall soon be convinced, that they cannot answer the end fully, and we shall find also that they are so constructed as not to admit of being applied exactly round the tooth; for, with all the care which we can possibly exert to go round the convexity of the tooth, still there will be some part which cannot be come at. But, by substituting the following simple scarificator, I hope all these defects will be completely remedied. D. E. Fig. 2. represents the instrument I propose, of its proper size; the handle at F. unscrews, and in it is contained three, four, or six blades, or scarificators, any one of which may be applied at pleasure; for by unscrewing the stem at G. out of the knob K. the blade H. also unscrews, and another of a different form may be substituted, and can be made *dead* fast in any direction by means of the screw at G. so that it may be exactly adapted to the curvation of the tooth, and of course the gum separated more completely than by any former scarificator. I. represents blades of different forms; one form being found, on some occasions, more convenient than another, and as any of them will fit the screw at D. they may be made fast in any direction, by means of the screw in the point of the stem at G.—K. represents the small button or end-piece unscrewed from the stem, and without a blade.

Aberdeen,  
Jan. 25th, 1799.

W. DYCE.

\* Mr. JOHN HUNTER “On the Diseases of the Teeth,” p. 90.

*Copy of a Letter from Dr. EUSTIS, of Boston, to a Friend in London, respecting the Use of cold Air and Water, in Fevers.*

" Dear Sir,

" **Y**OUR favour of last Spring, accompanied with Dr. CURRIE's valuable publication on the use to which water may be applied in fevers, was doubly acceptable; as an instance of your friendship and polite attention, and as gratifying my professional taste in a very favourite point. From an experience acquired by some years practice in the army, I had learned, that exposure to cold and weather was not an evil of such frightful magnitude to persons in fevers, as is generally imagined by the inhabitants of cities, and especially those in higher life: on the contrary, of febrile patients that were lodged in barns, sheds, and other open places, a greater number recovered than of those who were thought to be better accommodated in the close rooms of dwelling-houses, and regular hospitals: and whether sick or wounded, if I could procure the area of a Dutch barn, they were considered as well lodged, and the patients very generally recovered: this must be understood in reference to the summer and the beginning of autumn. Neither the dews of night, nor any accidental wetting from showers, were deemed half so dangerous, as the poisonous air constantly generated by the sick, respired and re-respired until the patient in a close room falters and sinks, while under the very eye of his physician, seldom adverting to the real cause.

" From the strong ideas necessarily imprinted on my mind by this experience, and observing many successful instances of exposing to currents of air in symptoms of the small-pox, together with an early conviction that many sick die of their own atmosphere; I always have been, and am, an enthusiast for air.

" The application of water, and that cold, I found recommended by Dr. JACKSON, of Jamaica, who had used it in the fevers of that climate with considerable success; and after reading Dr. Currie's book before mentioned, I was determined to give it a fair trial.

" When the epidemic or yellow fever broke out here last summer, many were affected with a heat of body, so intense as to render painful the hand of a healthy subject when long in contact: this appears to me to have been the genuine *causus* of the antients. In one of these cases, a boy of twelve years of age, subject to delirium, occasional stupor, picking the bed-cloaths, and other symptoms commonly reputed fatal,

I resolved

I resolved to make trial of the cold bath. In the morning I took him from his bed placed in a wood-shed in the yard, (to avoid the heat of the chamber), stripped him naked, had him led to the pump, (sea-water not being at hand), and poured over his head and body a common pail of pump-water. On returning to his bed he found himself cooled and refreshed, and the delirium sensibly abated. The same experiment was made afterwards with sea-water, and repeated three or four times a day for several days successively, with the same good effect. Once or twice the patient, when hot and uneasy, instinctively asked for the bath; and once, when he was particularly hot, I omitted the usual precaution of wiping the water from his body, and returned him to his mattress wet, as conceiving that the water evaporated too quickly. His fever began to abate, and after some days of a debilitated state, during which his recovery appeared doubtful, he gradually acquired strength, and now enjoys perfect health.

“ In another instance of an athletic subject who, after bleeding and other evacuations, complained of an inexplicable sort of pain in the head and small of the back; relief and a cure were manifestly the result of sponging the parts occasionally with sea-water, and exposing the patient to strong currents of air. In several instances the cold bath has been attended with the most beneficial effects; as I learn from other physicians; although in some it has failed. One patient was preserved by sponging the whole body with vinegar rendered cold by cakes of ice, where this was preferred to the cold bath; the effect however is precisely similar. In my own practice, this remedy has certainly saved two, if not three patients, who would have fallen under the ordinary treatment; and it has also proved serviceable in many other cases. One fact, and that of no small importance, seems fairly established; and in this I agree with Dr. JACKSON, that no injury can result from the application of cold water: at least, I never knew of such an instance. Is not the idea of catching cold in a fever, according to the usual acceptation of the phrase, an absurdity in terms? Cold is precisely the thing wanted in fevers; there is safety therefore and no danger in taking it.”

“ I admit that, while our epidemic prevailed, many cases occurred, in which it would have been improper to use the cold bath. In judicious hands, however, it is a most powerful remedy: in no others should any remedy be placed. I have met with one or two instances where the heat of the whole body was so intense, that nothing but the mechanical action of air and water on the surface could abate it; let me add, however, that in commending the free and fearless use of water, I speak of our cli-

mate



20 . Dr. Yeats, on the Treatment of Pulmonary Complaints.

mate in the summer season. In the winter I have used the partial bath with evident good effect."

Vale! Salve!

Boston, Nov. 21, 1798.

W. EUSTIS.

To the Editors of the Medical and Physical Journal.

SUUM CUIQUE.

SIR,

AS medical disquisitions will properly enter into the plan of your proposed journal, I hope the following observations will not be deemed irrelevant to its contents. I have already, in my observations on modern discoveries, endeavoured to restore to the authors of the last century their long-lost honours; and I am happy in having an opportunity of not suffering the well-earned distinction of another to be eclipsed for want of due investigation. In a work \* published about a year ago, a method, or a new principle, as is imagined, is introduced for the treatment of pulmonary complaints. "This principle," says the author, (which I conceive the reader will find established in the following remarks) "is that of a particular and strict limitation of liquids, during the treatment of every pulmonary disease. It appears wonderful that practitioners have never thought of this principle, but have, on the contrary, constantly treated patients labouring under pulmonary affections in the same way as if they had laboured under similar diseases of any other parts of the body." † Catarrh is a complaint which affects the lungs more or less in different persons, and often terminates in lingering phthisis, or in direct hæmoptysis; in the former, when the scrophulous influence is present, it forms tubercles; as well as in the latter, when the tender vessels in a delicate constitution are ruptured by repeated fits of coughing. In this point of view, catarrh may be termed a pulmonary disease in the strict sense of the word.—The idea of a limited use of liquids has been long ago taken up, and the practice of it subjected to experience.—"In quantum, igitur, 'says Lower,' ex sero sanguinis materia catarrho supeditatur, quicquid ei pabulum detrahit, aut serum per renes præcipitat, vel per alvum derivat, vel per poros corporis dispellit, intentioni curativæ apprimè satisfacit. Quare quum catarrhus primo urget, nihil magis ei supprimendo conducit, modo absque febre sit, quam ut sitim diutissime toleremus tridui enim vel quadridui abstinentia a potu plures novi a catarrho prorsus liberatos, cujus alia ratio non est, quam quod fomite subducto omnino exsiccat, non aliter ac rivuli exarescunt ex pluviarum penuria." (*De Catarrhis.*)

The

\* Observations on the Pulmonary System, &c. &c. by WILLIAM DAVIDSON.

† Introduction, p. 9.

The intention of Mr. DAVIDSON, in putting his theory in practice, is to obviate the stimulus of distention; and that of LOWER, to diminish the pabulum which supplies the increased secretion in catarrh. Which is the better theory? Now that the humoral pathology is exploded, the theory of Lower must give way to the action of vessels; but his observations and consequent practice have nevertheless a claim to considerable ingenuity.

Dr. DUNCAN, of Edinburgh, has frequently treated with success some cases of chronic catarrh, on another principle, mentioned by Lower, viz. by determining to the kidneys.

The Professor has given what in his opinion may be properly called a purgative diuretic, which, by lessening the afflux of fluids upon the lungs, diminishes irritation, and cures, if I may be allowed the expression, by derivation and revulsion. The reasoning in Lower is precisely similar.

I am, Sir,

Your's, &c.

Bedford, January 9, 1799.

G. D. YEATS.

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*A singular Variety of the Disease termed Chorea Sancti Viti:  
Communicated by G. C. DELARIVE, M.D. Assistant Physician  
to the Public Dispensary, London.*

*To the Editors of the Medical and Physical Journal.*

HAVING now under my care a case of the chorea, attended with some remarkable circumstances, which may perhaps throw fresh light on the nature of that disease, I take the liberty to send you the particulars of it; anxious as I am to co-operate with you, as far as I am able, in an undertaking which cannot fail to prove both acceptable and useful to all medical men.—The case I allude to is the following:

Richard Hodge, aged fourteen years, a shoe-maker, was admitted into the Dispensary in Carey-street, on the 7th of January. So long as he remained in an erect, or horizontal position of body, he was perfectly well. While standing, he was able to perform any voluntary motion whatever; as to extend his arm, and reach at any thing: he could also walk without any lameness, or dragging of one of his feet; so that he was to all appearance in perfectly good health. But on his attempting to sit down, his legs and thighs instantly became agitated with the most violent convulsions; the right foot was first affected; it was alternately outwards and inwards. These motions increased by degrees; at first he fell to kicking forward

and backward, and afterwards to stamping the ground, which he did with a prodigious force. The same agitation took place, but in a less violent degree, and rather later, in the left leg and thigh. These convulsive motions were not attended with any pain, unless that arising from the force with which he struck the ground with his feet. By long sitting down, instead of abating, they increased to such a degree that, as he declared himself, he would have been knocked out of his chair, had he not arisen and put himself in a standing posture, in which he found himself perfectly at ease.

Though he could at any time raise himself from his seat, and by so doing put an end to these violent contortions, while sitting he had very little power over his legs; he was able, indeed, to stretch out one of them, but he could not retain it in that posture above one or two seconds; nor could he, though ever so willing, check these convulsive motions in the smallest degree. The trunk of his body, his face, and his arms, were not, however, in the least affected. When laid down on his bed, he was perfectly well; when made to sit on a chair, with his legs placed in an horizontal position, they became convulsed, but apparently in a less degree than when his feet reached the ground. While standing he could keep one of his legs and thighs bent against his body for some time, without any convulsions taking place; and when laid down in his bed, he could draw up his legs, and remain in that situation without any inconvenience. He was very distinct in his speech, his mind did not appear in the least affected, and all his natural functions were regular. He complained bitterly of his situation, not as being accompanied with any pain, but with considerable fatigue; as he was obliged to be on his legs the whole day, and when weary to lie down on the floor.

About nine weeks prior to his admission to the Dispensary, he had been seized with giddiness, sickness, and a general shaking of his body; his arms and legs were agitated with slight convulsive motions, which always became worse on sitting down. He took bark without any benefit, but was relieved, for the space of about three days, by the use of sweating-powders. He was directed to be electrified twice a day, and to take a great deal of exercise. Under this regimen, which he continued for about one month, he recovered so far as to find himself pretty well: at last, he left off electrifying, and returned to his work; a few days after he found himself quite unable to sit down for any length of time; and had been in the situation above described a fortnight before he applied to the Dispensary.

On the 7th of January he was directed to take the *pil. carul. j*\* three times a day;

\* According to the New Nomenclature, called *pilule cupri*, each of which contains somewhat more than half a grain of the *cuprum ammoniacum* of the Edinb. Pharmacopæia.

a day; on the 9th he was precisely in the same state as before, the pills producing some degree of sickness on his stomach; he continued, however, to take them, and was also directed to have a blister applied on the os sacrum. The blister rose partially, and was removed on the next day, the 10th; yet he could sit down on this day for half an hour together, without feeling any inconvenience, and on the 11th, he was able to remain in that situation for an hour or two. The blistered place was healing very fast, when, on the 12th at night, he felt some slight return of his complaint. In consequence of this he was directed to keep the blister open, by dressing it with the ung. canth. he did so, and since that time has entirely recovered, and is now perfectly well. He is able now (January 25, 1799), to sit down for a whole morning: the blistered place, which is dressed with common cerate, is not yet healed up; he has never omitted regularly taking his pills.

G. C. DELARIVE.

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*Proposals for applying the Tourniquet, to restrain Arterial Hemorrhages from the lower Extremities: by A. CARLISLE, Surgeon to the Westminster Hospital.*

IN the practice of many surgical operations, and also in a variety of cases which occur through accidents or diseases, it frequently becomes an object of great importance, to suppress the bleeding from arteries, without intercepting the circulation throughout the whole limb. In such cases, the following method of applying a tourniquet to the lower extremities may be safely recommended to the practitioner. A hard roll of linen bandage, about four or five inches in width, and three in thickness, being provided, and a piece of smooth board, nine inches in length, five in width, and three quarters of an inch in thickness, with the sides and ends squared at right angles, the roller is to be placed in the ham, mid-way between the external and internal flexor tendons on the under sides of the knee joint, the leg being extended in a straight line; the piece of board is then to be placed over the roller, which is to act as a pad of compression on the popliteal artery, the length of the board running cross-ways and projecting beyond the knee-joint on each side.

B 4

The

We are informed by Dr. DU ROIS, in the first Number, Vol. IV. of the Medical and Surgical Journal, edited by Prof. HUFELAND, that the exhibition of this substance has been attended with the most beneficial effects, in an inveterate case of epilepsy. A girl, 16 years of age, who had been troubled with epileptic fits for three years, was directed to take *half a grain* daily of the cuprum ammoniacum; and after having produced nausea and vomiting, which were checked by the administration of the proper medicines, the dose was increased gradually to *five grains* daily. The patient completely recovered, having had no fits during seven weeks, whereas formerly she was regularly attacked twice and three times a week.

The girth of the tourniquet is to go round the knee above (not upon) the patella, and over the projecting ends of the board. The screw should rest at the upper part of the limb above the patella, having a pad interposed between it and the skin. This mode of compressing the popliteal artery is attended with an important advantage, it allows the arterial circulation by the lateral anastomising vessels to proceed uninterrupted; the large superficial veins also are undisturbed, so that the limb remains in the same state as if the artery alone had been tied.

It is obvious, that this mode of applying the tourniquet will not be proper at the time of amputation. In all cases however of hæmorrhages, when there is a chance of saving the limb, it will be found preferable to the total stoppage of circulation by the ordinary methods. Also in gun-shot wounds, compound fractures, secondary hæmorrhages after amputation below the knee, and in cases of necrosis, where portions of dead bone are to be removed by force, dangerous troublesome bleeding, from arteries enveloped in newly formed bone, where they cannot be secured by ligature, this mode of practice will prove advantageous,

*Soho Square, Feb. 2, 1799.*

*On the Disease of the Eye, called Amaurosis, or Gutta Serena; extracted from an Essay of Professor ARNEMANN, of Goettingen.*

IT is with great satisfaction we observe the progressive improvement of the medical art, and are led to admire and applaud human ingenuity, when diseases themselves are now-a-days employed to reduce the catalogue of human misery. We inoculate the small-pox, in order to deprive this dangerous enemy to the human race of its destructive power; we purposely reproduce the itch, *plica polonica*, and similar disorders, with a view to obviate more fatal maladies, and—an ARNEMANN even excites vertigo in his patients, the more effectually to extirpate this species of blindness. And yet, considering the subject in an extensive point of view, it must be confessed, that physicians have ever adopted it as a standing maxim, to remove or suppress the more important diseases, by artificially inducing others of less dangerous tendency. What else can we call diarrhoeas, the effects of diaphoretics, and even those of emetics, but slight distempers created or produced for the sake of obviating greater ones? Notwithstanding this, Arnemann is, within our knowledge, unquestionably the first who conceived the original idea of strengthening and restoring its tone to the eye, by exercising it with vertiginous or rotatory commotions of the head.\*

This

\* This effect may be produced by placing the patient on a whirling table, with his head at various distances from the centre. B.

This ingenious proposal is certainly intitled to respectable attention; neither is it improbable, that the same or a similar method might be introduced with advantage, in nervous and other affections of the head, in which the modern imitators in physic find themselves frequently baffled.

The determination of the blood towards the head, which accompanies giddiness, affords some rational grounds for this conjecture, and may well justify the attempt. An increased access of the fluids to the relaxed parts must assuredly be productive of beneficial effects, and particularly in cases where this relaxation originates in torpor. A remedy of this nature will then act properly as an exciting mean; inasmuch as the access of the fluids rouses the vital power. Here then we should enquire, whether the intervention of that circumstance (*viz.* the access of the fluids) offers any particular advantages in the use of this remedy?—As vertigo is, in every instance, a morbid indication in the language of physicians, it may well be considered a decisive symptom that such a remedy operates on the weak nerves, and inundates them with fluids in a preternatural degree; but we are not thence intitled to prefer the application of one *excitatory* to another which is not of the vertiginous kind; as for example, the use of soporific remedies. Dr. Arnemann, therefore, has very properly remarked, that the excitation of vertigo, if it prove to be of salutary effect, is a favourable sign; but it is not, on that account, to be considered as a co-operating cause in removing the complaint.

This distinction is the more necessary to be attended to, as the choice and application of the remedy are thereby determined. With all the aid of theory, we can find no satisfactory arguments to recommend the vertiginous remedies, as such, in the cure of the amaurosis. Their sudden, and as it were momentary, effect, indicates either a greater degree of debility, or an increased circulation of the blood; and although it may be judged a favourable symptom in the latter case, yet it is not even then by any means a material circumstance. The circulation of the blood is by these remedies only so far promoted, as they are in their nature stimulating, and not from the effect produced by them, *viz.* vertigo. The case would be different, if *giddiness of itself* were necessarily accompanied with increased commotions in the whole system; but this is observed to take place only in vertigo from plethora. The greater number of species of vertigo are, on the contrary, attended with a weak, unequal hysteric pulse, and generally with paleness in the face, and a sensation of cold.

These objections, to which the now proposed method of cure in amaurosis is liable in theory, are by no means intended to depreciate the just praise to which the author has an undoubted claim, for the *practical* discovery of another remedy, against the same disorder. It briefly consists of *camphor*,  
with

with and without belladonna; an excellent tonic and strengthening medicine to the eyes, and which has frequently done essential service, even in the dangerous species of cataract. But let it be remembered here, that camphor and belladonna can be productive of good only in cases of real debility, arising from want of excitation, or in *asthenia*; while, on the contrary, in plethoric weakness and paralysis, they must necessarily be detrimental to the patient, and aggravate rather than diminish the symptoms of the disease.

The salutary effect of camphor, administered with and without belladonna, has been strongly confirmed in the practice of the learned Professor, who appears to have prescribed it successfully, in a variety of cases. The former was directed to be taken in doses, from two to six grains, generally twice a day; the belladonna from one to two grains at a time, two doses every day.—In one particular instance of amaurosis, as described by the Professor, and which originated from external injury, other practitioners would, no doubt, have preferred the flowers of the *arnica*\* to either camphor or belladonna; as these flowers, by the concurrent testimony of practitioners, have acquired the reputation almost of a specific, and

\* The *Arnica montana* of Linnæus, or German leopard's bane, is one of the most deleterious vegetables we are acquainted with. It has long been known and used by the common people in Germany, as an efficacious remedy for bruises and other external injuries, especially with a view to resolve and disperse extravasated and coagulated blood: hence the Germans have given it the name of *Fallkraut*, or the herb for falls and bruises: FARR was the first who published an account of the virtues of this plant, in the 9th and 10th vols of the "*Ephemerides of the Imperial Society of Naturalists at St. Peterburg*;" in which he calls it '*Panacea lapforum*.' But on account of the violent stimulus which this remedy excites, so that the external use of it is generally attended with great anxiety, and frequently also with vomiting, it requires much precaution in the mode of exhibiting it. In most cases it is necessary, previous to its use, to take a few ounces of blood from the patient, to open the body by means of glysters and cooling laxatives, and if the inflammation should be considerable, to postpone the administration of the medicine till the inflammatory diathesis be suppressed, or greatly mitigated.

The herb and flowers of the *arnica* are, to irritable habits, most conveniently given in simple infusion. One drachm of the dried flowers, or double that quantity of the leaves, is infused in one quart of cold water, and a tea-cup full of this infusion is directed to be taken every two, three, or four hours through the day; this small dose ought to be gradually increased, according to circumstances, so that from one to three or four drachms may be infused in one quart of water. On account of its volatile particles, this plant should never be boiled; and, for the same reason, the infusion ought to be made in *close vessels*. According to the opinion of the celebrated Dr. CROLL, a cold infusion of the *arnica* is preferable to the strongest decoction; as the water of the former, in twenty-four hours, becomes as highly coloured and penetrating as the root itself.

Perhaps the want of success, together with the different effects of this vegetable, as observed by different practitioners, is chiefly to be ascribed to their inattention, with respect to the mode of its preparation, and the manner of its exhibition.—An useful addition to the above directed infusion, are the leaves and flowers of the milfoil. *Achillea Millefolium*, Lin. which eminently possess the property of diminishing the violent, stimulating effects, generally following the use of the *arnica*.

and as they have lately been employed with singular success by Dr. COLLIN of Vienna, in patients afflicted with the cataract.—We cannot, however, omit to observe in this place, that other medical practitioners, particularly Dr. RICHTER of Goettingen, and Dr. GESSENIUS of Nordhausen, in Germany, have lately been much disappointed in the specific virtues these flowers are said to possess, either in cases of general paralysis, or gutta serena.

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*Experiments on the Analysis of Atmospheric Air; with Observations on Dr. PRIESTLEY'S Experiments, lately read before the American Philosophical Society.*

THE system of LAVOISIER seems now so firmly established, as to stand in need of no formal vindication; the conversion of several eminent and strenuous advocates for the phlogistic doctrine, to this simple and elegant theory, has within these few years contributed not a little to its stability; yet, whilst a philosopher so distinguished in the annals of science as Dr. PRIESTLEY, still maintains the contrary opinion, it is certainly worth while to examine, upon what grounds he defends a system, now almost universally exploded.

Our atmosphere, or the air which we breathe, is composed of two permanently elastic fluids, of very different and opposite qualities; the one unfit for respiration or combustion, and therefore called azote, or azotic gas, the other possessing both these properties in a very eminent degree, and on that account denominated *pure* or *vital* air, or more justly, and in conformity to the new nomenclature, oxygen-gas.

From the intimate combination of these two æriform fluids, in proportions which we shall state hereafter, results what we in general term common or atmospheric air.

Modern chemistry furnishes us with abundant means of determining the nature and relative proportions of these two gases, which, not being chemically united, but existing merely in a state of intimate mixture or combination, are easily separable by a substance possessing an elective attraction for either of them.—Thus, if pure mercury be exposed for some time in closed vessels filled with atmospheric air to a degree of heat nearly approaching to ebullition, a quantity of air will disappear, and the mercury be converted into a red powder, which has gained an addition of weight equal to that of the air absorbed. On examining the air in the vessels, we shall find it differing materially in properties from that which we began to experiment



experiment upon. A candle plunged into it is immediately extinguished, and a live animal introduced beneath a bell-glass filled with it, perishes instantaneously: in short, it appears to have lost all power of supporting either respiration or combustion. If the red powder formed during the process, be next submitted to examination, and exposed to a red heat in a retort, to which is adapted an apparatus for collecting such gaseous fluids as may be produced, a quantity of air will be obtained precisely equal in bulk to that which had before disappeared, at the same time that the red powder rises in vapour, and is collected in the receiver, in the form of running mercury. On subjecting this new aerial product to the same trial as the former, we shall find that, instead of extinguishing flame and destroying life, it is eminently capable of supporting both. A taper immersed in it, burns with a dazzling splendor; and red hot charcoal introduced into it, instead of consuming quickly, as in-atmospherical air, burns with great rapidity, attended with a decrepitating noise and unusual production of heat and light.

It appears therefore from these experiments, that mercury, at a degree of heat approaching to ebullition, possesses the power of decomposing atmospherical air, and of combining with the pure part or oxygenous gas, which is thus separated from the other constituent part, or azote, and therefore furnishes us with a mode of determining their respective natures. To ascertain exactly the proportions in which they are combined, other means must be made use of, as in these experiments the mercury is never able entirely to separate the last portions of oxygen, partly on account of its attraction for the principle of heat, and partly on account of the mutual attraction which subsists between the two component parts of the atmosphere.

If a bell-glass be inverted over a solution of liver of sulphur, the air contained therein will suffer a diminution, which will go on during several days, and then cease. The unabsobered part will be found to be pure azote, the oxygen alone being absorbed, and the diminution, when accurately examined, will be found to be about 27 parts in 100. So that atmospheric air is a combination of azote with oxygen gas, in the proportion of about seventy-three parts of the former to twenty-seven of the latter.

It is evident that these proportions must somewhat vary in certain situations, and be liable to alteration from local changes in the atmosphere\* ; yet the difference is never very great, generally not more than three or four parts in a hundred; and if we mix in the proportions here given, a quantity of azote obtained by means of liver of sulphur, with the gas expelled

\* In a future Number we shall give the result of various experiments made on the atmosphere of London and its vicinity.

expelled from the red calx of mercury, a precipitate *per se*, we shall obtain a species of air resembling atmospheric or common air in every respect, being capable, like it, of supporting life and combustion, and affording, when submitted to analysis, precisely similar results.

We shall now advert to those experiments of Dr. Priestley, which have given rise to these observations, and which were instituted with a view of controverting the preceding statement. In all cases of what is called the phlogistication of air, there is, says Dr. Priestley, an emission of something from the substance, which the antiphlogistians suppose to act by simple absorption. This is the same that has been called phlogiston, or the principle of inflammability, which, uniting with dephlogisticated air, forms with it part of the azote found after the process.

The experiments adduced in support of this opinion, and upon which he lays the greatest stress, are made with *charred bones*, heated in atmospheric air; and as nothing in them is volatile, except that which constitutes their blackness, I thought, says Dr. Priestley, that they would be a convenient substance wherewith to make these experiments.

We shall extract a few of them from his paper, and then proceed with our remarks. "Having by means of a burning lens heated 140.5 grains of well-burned black bones in 28.75 ounce measures of air, it was reduced to 20 ounce measures completely phlogisticated, without any mixture of fixed or inflammable air in it. According to this experiment, the quantity of pure air in 100 ounce measures of atmospheric air, was only 15.78 parts instead of 27.

"Heating 267 grains of these bones in 30 ounce measures of air, it was reduced to 25.5 ounce measures completely phlogisticated, which was in the proportion of 15 parts dephlogisticated air in 100 of atmospheric. In these experiments with bones there is sometimes a small *loss of weight*, owing, I doubt not, to something besides phlogiston being expelled from them by the heat of the lens, &c. I had similar results from experiments made with small polished *steel needles*; for when they were heated so as only to become blue, and were not melted, they gained very little if any weight, and diminished the air only in about the same proportion as the bones.

"I heated 200 grains of polished needles in 16.75 ounce measures of air, when it was reduced to 13.5 measures completely phlogisticated without any mixture of fixed or inflammable air in it; so that the diminution was in the proportion of 19.4 parts in 100.

"There was not however the same certainty in the experiments with the needles, and still less with the iron, as in those with the bones. *They generally gained a little weight, and diminished the air more than the bones.*

"When

"When the needles were heated over lime water, a thick crust was formed upon it, but there was not such a precipitation of the lime as in the experiments with the bones."

It is hardly necessary to have recourse to experiment, to prove the inaccuracy of the preceding observations. In all the cases of diminution of the air by the black bones, a quantity of carbonic acid was produced by the union of the carbon contained in them with the oxygen of the atmospherical air. The loss in the weight of the bones, and the precipitation that took place when the experiments were made over lime water proves this fully, and it is probable, that in examining the residuum, Dr. Priestley was not sufficiently careful to separate this gas from the phlogisticated air that remained, which would consequently escape detection, if he made use of the nitrous air as a test of its purity. This opinion is strengthened by the various results he obtained in his experiments; sometimes, though the air was completely phlogisticated, the diminution was only 15 parts in 100; at other times 15.75, and once 19.4.

The experiments with steel needles are not more conclusive, or less liable to objection. Carbon is one of the constituent parts of steel, and it is from this source that we must derive the carbonic acid, formed when they are heated. Thus, while one portion of the oxygen of the atmospherical air united with the carbon of the steel, to form carbonic acid, which was in part absorbed by the water, another portion united with the iron, which was by that means partially oxydated, and received a small addition of weight. The phlogisticated air found after the process is what existed originally in the atmospherical air employed.

But, says Dr. Priestley in his experiments, there is always a greater proportion of phlogisticated air found after the process, than enters, according to the antiphlogistians, into the composition of atmospherical air. This additional quantity, he supposes, is derived from the union of part of the oxygen gas of the atmospherical air, with the phlogiston emitted from the bones, a supposition, which, however, we hope the following experiment will completely refute,

We exposed a piece of black bone (which had been charred in an intense degree of heat) to the focus of a burning lens in a bell-glass, placed on a quicksilver bath, and half filled with pure oxygen gas, expelled by gentle heat from oxygenated muriate of potash; the volume of the air was increased by the application of heat, and after it had been suffered to cool, appeared somewhat augmented. Having withdrawn the bone that was unconsumed, a solution of caustic alkali was introduced under the bell-glass, which absorbed nearly nine-tenths of the whole gas, which therefore consisted of carbonic acid. The remainder, on examination, was pure oxygen gas, with the exception of a small bubble

bubble of azote, which we are convinced existed in the gas previous to its being introduced under the bell-glass. After such unequivocal proof, that when phlogificated air is not employed, none is produced, it is certainly presumptive, that it is not produced in the other instances; and, indeed, it appears strange to us that the union of what is termed phlogiston with oxygen, should at one time generate fixed air, and at another azote, without any apparent cause for such a capricious result.

The observations which Dr. Priestley makes on the phlogification of nitrous acid, by absorbing nitrous gas, are not a little extraordinary. They seem almost to prove, that he still does not comprehend the principles of the new theory :

“ That the phlogification of nitrous acid is owing, in some cases, to its *imbibing* something, and not always to its parting with any thing which the antiphlogistians maintain, is evident from its becoming phlogificated by *imbibing nitrous air*. M. Fourcroy supposes, in his “*Philosophie Chymique*” that the conversion of the common nitrous acid into the phlogificated, is always occasioned by its parting with oxygen. That this is sometimes the case, I have demonstrated in my experiments, with heating in long glass tubes; but in the present case, it is not possible that the acid should have parted with any thing, and least of all with oxygen, since the small residuum of nitrous air is pure azote”.

Let us examine into the constituent principles of nitrous acid, and see if we cannot prove this strange paradox true, that nitrous acid, by imbibing nitrous air, loses oxygen. Azote combined with oxygen, nearly in the proportion of one to two by weight, forms nitrous gas, which is by no means saturated with oxygen, since in this state it seizes it with avidity from the atmosphere. The further addition of oxygen converts it into a powerful acid. When the proportions by weight of oxygen and azote, says Lavoisier, are below three parts of the former to one of the latter, the acid is red-coloured, and emits copious fumes. In this state, by the application of gentle heat, it gives out nitrous gas, and we term it in this degree of oxygenation, *nitrous acid*. When four parts by weight of oxygen are combined with one of azote, the acid is clear and colourless, more fixed in the fire than the nitrous acid, has less odour, and its constituent elements are more firmly united: this species of acid, in conformity with our nomenclature, is called nitric acid. Thus *nitric acid* is the acid of nitre surcharged with oxygen; *nitrous acid* is the acid of nitre surcharged with *azote*, or what is the same thing, *nitrous gas*, and this latter is azote, not sufficiently saturated with oxygen to possess the properties of an acid.

Nothing

Nothing can be more easily explained, according to these principles, than the phlogification of nitrous acid, by imbibing nitrous air. Its proportion of azote becomes thereby increased, a process which is equivalent to the subtraction of a portion of the other constituent part, or oxygen; and thus confirms the accuracy of M. Fourcroy in stating, that the phlogification of nitrous acid is always occasioned by its parting with oxygen.

The other experiments detailed in this paper are what have been repeatedly before urged, and as often refuted. Dr. Priestley has himself proved, that air confined in wet bladders is externally affected; besides, the least tendency to putrefaction would materially affect the result of the experiment. With regard to the formation of phlogificated air, by keeping long confined in a bottle a mixture of dephlogificated and inflammable airs, we can only affirm, that with us it never would succeed. A mixture of these two airs, confined over mercury near two months, suffered no perceptible change; and another mixture, kept three months, was diminished about one fortieth of its original bulk; but both exploded with a degree of violence that did not appear to us at all inferior to that of newly prepared gases; and being accurately examined, did not afford the least portion of phlogificated air. We shall conclude with observing, that these experiments of Dr. Priestley have not, upon the whole, that scrupulous exactitude, which in philosophical investigations we have a right to demand, and particularly so, in experiments instituted with a view of establishing a controverted doctrine.

Much as we admire the genius and talents of Dr. Priestley, we cannot help thinking, that his rejection of the antiphlogistic doctrine arises not solely from want of demonstrative experiments. It is difficult for a man to abandon opinions which he has been the first to promulgate—opinions founded on a series of discoveries the most brilliant, perhaps, ever made by one individual in the science of chemistry. Yet from Dr. Priestley we can expect every thing; a slight acquaintance with his works will convince any one, that he is not the slave of hypothesis; and that, influenced by facts, he has more than once recanted his own opinions, and we are not without hopes yet of hearing him join with the rest of the philosophic world, in adopting the sublime truths of the unfortunate but immortal Lavoisier.

T.

*London, Feb. 6, 1799.*

*An accurate Description of the Balm of Gilead; its Growth, and remarkable Properties, by Professor WILDENOW, of Berlin.—With a Plate.*

**T**HE Balm of Mecca, or as it was called by the ancients, Balm of Gilead, is one of the most celebrated medicines which have long been, and are still employed by the Physicians of the East. It has preserved its reputation, from a period prior to the birth of Christ,\* even to the present day, and is considered by the Turks, and other oriental nations, as one of the most efficacious and universal medical remedies. To whatever circumstance it may be ascribed, whether from the adulterations to which it is exposed, in passing through so many mercenary hands, before it can arrive on our shores, or from the monopolizing spirit of the Eastern despots, who carry on a profitable traffic with this highly esteemed balm, it is but rarely imported into Europe. In its genuine state it is sent from Mecca, now its native soil, only to the great princes and sovereigns of Europe, as a scarce and valuable present from the Grand Seignior. In this state it is kept in square leaden bottles, ornamented with a variety of whimsical figures. If it be frequently exposed to the access of fresh air, many of its volatile particles evaporate; and, gradually assuming a tenacious consistence, it changes at length into a solid resinous body.

The odour of this balm, in its original state, resembles a compound of rosemary and sage, partaking also in a slight degree of the nature of turpentine; besides which it partially emits the flavour of lemons and mace. The best sort is clear and of a greenish colour; it possesses this singular property, that if a drop of it be deposited on a glass of water, it instantly spreads over the whole surface and may be easily removed by means of a needle, having acquired the form of a tender pellicle. By this peculiar property the true Balm of Gilead may be readily distinguished from all the

\* The place where it formerly grew was Gilead, in Judea, more than 1730 years before Christ, or 1000 years before the Queen of Saba came to Jerusalem; and nothing is more certain, than that the balsam-tree had been transplanted from Abyssinia to Judea, and become an article of commerce there; and the place from which it originally was brought, through length of time, combined with other reasons, came to be forgotten. This is, however, contrary to the authority of JOSEPHUS, the Jewish historian, who says, that a tree of this balm was brought to Jerusalem by the Queen of Saba, and given, among other presents, to Solomon, who, as we know from Scripture, was very studious of all sorts of plants, and skilful in the description and distinction of them. Here it seems to have been cultivated, and to have thriven so that the place of its origin came to be forgotten.—BAUCER'S *Travels*, Vol. V.

the spurious or adulterated kinds;\* as it is a remarkable fact that very few of the oleaginous bodies exhibit a similar phenomenon.

The taste of this balm is bitter, astringent, and acid. Among the Eastern nations it has long been a favourite and popular remedy taken internally, in cases of diseased intestines, ulcers of the lungs, liver, and kidneys; and, in general, it is reputed an excellent diaphoretic and alexipharmic medicine. To persons who have swallowed poison, or have unfortunately been bit by serpents, scorpions, or other venomous animals, it is administered internally, as well as applied externally to the injured part. The modern Egyptians make daily use of it, during the ravages of the plague, in order to prevent or repel that destructive malady. It is further believed that the Egyptian women possess the wonderful art of rendering themselves fruitful, either by the internal use of this balm, or by perfuming and smoking their bodies with it. The beauty of the skin is also said to be not a little improved by the use of it; and the ladies of the seraglio anoint their bodies with it, after tepid bathing. A celebrated English lady, who long resided in Turkey, ventured to imitate this oriental custom; but, whether from a too prodigal use of the balm, or the improper application of it, disagreeable effects followed; her face swelled violently, the whole of the epidermis, or scarf-skin, peeled off, and her whole body broke out in blotches, and other cutaneous eruptions. Throughout the East, the balm of Mecca is to this day considered as a sovereign remedy against all diseases; and such is the unalterable veneration the Orientals entertain for it, that every part of this tree is, in some form or other, converted to medical purposes. For, besides the balsam or balm, its fruit is employed under the name of what we call in Europe *Carpobalsamum*, and the wood, stalk or trunk, under that of *Xylobalsamum*.

The ancient oriental physicians made use only of that balm which spontaneously dropped from the tree, or which exuded after incision: at present, however, there are three different methods of obtaining it, each of which furnishes a distinct species of the balm. The first mode of collecting it, is that

\* When Sultan Selim made the conquest of Egypt and Arabia, in 1516, three pounds was then the tribute ordered to be sent to Constantinople yearly; and this proportion is kept up to this day. One pound is due to the Governor of Cairo, one pound to the Emir Hadje, who conducts the pilgrims to Mecca, half a pound to the Bashaw of Damascus, and several smaller quantities to other officers; after which the remainder is sold or farmed out to some merchants, who, to increase the quantity, adulterate it with oil of olives, and wax, and several other mixtures, consulting only the agreement of colour, without considering the aptitude of mixing. Formerly, we were told, it was done with art; but nothing is easier detected than this fraud now.—BRUCE'S *Travels*, Vol. V.

that pursued by the ancients, or by incision, which produces by far the most valuable balm; this species is never exported as an article of trade, and its consumption is chiefly confined to the principal and richest families of Mecca and Constantinople. The second mode of producing the balm depends upon boiling the branches and leaves; this sort is perfectly pellucid, and emits an agreeable fragrance. The Turkish ladies apply it externally to beautify their skin, and make their hair grow; this is the kind which the Grand Seignior sometimes sends as a present to other princes, and which is occasionally vended in the shops, as a rare and costly article. The last, and a very inferior species of the balm, is obtained by a repeated and stronger decoction of the leaves and branches: in this state it becomes much thicker, but less fragrant, and is transported to Europe by the caravans, under the different names of balm of Mecca, Gilead, Judea\*, or *Opobalsamum*, signifying the juice of the tree. This kind is not much valued in the East, and is used only by the lower classes of people.

It appears from the most authentic ancient writings, that the balm of Gilead was an important article of commerce, several centuries before the Christian æra; but, notwithstanding its well-founded claim to antiquity, its native soil (the place at least of its present growth) has been discovered only by the travellers of modern times. BRUCE, the Abyssinian traveller, has first pointed out the native soil of this balm, being the same as that of the myrtle, behind *Axab*, along the coast of Arabia, and extending to the Straits of *Babelmandel*. Anciently, it was believed that Egypt, Palestine, and Arabia produced this balsamic tree; but, however that might be in former times, it is certain that now it is only cultivated artificially in those countries, that it does not thrive so well there as other indigenous plants, and that the inhabitants are obliged to import annually a fresh stock of young trees, to supply the place of the decayed ones.

Ancient writers have related many marvellous and fabulous things as connected with the history of this tree. Some asserted that vipers were continually breeding under its shade; according to others, it possessed such a degree of antipathy to iron, that it sensibly trembled, on the smallest particle of iron entering into contact with it, and that on this account any incisions made in its rind must be performed with ivory, glass, or some other hard substance. Mr. Bruce, however, was an eye-witness to this incision being made with an axe, without any trembling on the part of the tree,

\* The Balsam of Judea was long ago lost, when the troubles of that country withdrew the royal attention from it; yet, as late as GALEN's time, it not only existed, but was growing in many places of Palestine, besides Jericho; but there is no doubt that it is now totally lost there. — *Bruce's Travels*, Vol. V.



tree, and it is also probable that similar operations have been always made with the same instrument. Other writers have maintained, that persons who anoint their bodies with this balm, have a peculiar claim to never fading beauty, and to perpetual youth.

Of more importance to the botanist than these particulars, is the knowledge of the plant itself. LINNÆUS, in his System of Plants, notices two species of the Amyris, namely the *Amyris Gileadenfis*, and *Opobalsamum*, both of which are represented in general terms as trees producing this balsam. The late Dr. GLEDITSCH, of Berlin, an eminent physician and botanist, had an opportunity of examining a branch, which he found to correspond in its principal characters with the *Amyris Opobalsamum* of Linnæus. He discovered, however, in the stamina of the flower, deviations which appeared to him sufficiently important to warrant the description of it as a distinct genus; he accordingly gave it the name of *Balsamea Meccanensis*. The difference in the parts of the flower, as observed by Gleditsch, consisted in the peculiar connection of the filaments, which, according to Linnæus' mode of defining it, are consolidated with the thalamus, or receptacle; but which, in the plant examined by Gleditsch, were, in fact, connected with the bottom of the calyx,

The situation, or rather the manner in which the filaments are united to the flower, is a point of great importance in botany; for, although plants should sufficiently correspond in all other parts of the flower, they must be considered as distinct genera, if a difference prevail in this respect. It is, however, frequently a matter of difficulty to ascertain the true position of the filaments; because the boundary between the calyx and the receptacle cannot, in all instances, be accurately distinguished. After a diffuse description of the balm-tree, Linnæus informs us that the filaments are joined to the edge of the receptacle; while Gleditsch insists that this edge is a part of the calyx itself. Hence it is evident, that the plant described by the latter naturalist does not in reality form a distinct genus, but is the same as that which Linnæus has given under the name of *Amyris*.

Although it be now certain that the balm-tree falls under the generic term of *Amyris*, it still remains to be determined, whether it be the species called by Linnæus *Gileadenfis*, or that called *Opobalsamum*. In this respect, also, our doubts will disappear, if we compare the historical notices which we have of the plant, with the accounts of its character given by botanists. Linnæus describes the *Amyris Gileadenfis* as a plant with ternate leaves, (*foliis ternatis*) which are not indented on the edge: the *Amyris Opobalsamum*, on the contrary, he characterises as having pinnated leaves,

(*folia*

(*folia pinnata*) the leaflets of which are without a stem. In the specimen of the plant observed by Gleditsch, were double pinnated leaves (*folia bipinnata*). This difference in the accounts might lead us to conclude, that there existed a distinction of three different balm-trees; but if we attentively compare the manner in which different and particularly kindred plants proceed in their vegetation, these three apparently distinct plants will prove to be manifestly one and the same species. Indeed, most plants are, in their different stages of growth, subject to a variety of changes. Those which, in their infant state, usually have simple leaves, with their increasing age have them more compounded; and *vice versa*. The latter is, for instance, the case in the family of plants called by botanists *Lomentaceæ*, and which includes two genera, distinguished by the names of *Gleditsia* and *Mimosa*. The well-known *Gleditsia triacanthos*, when young, has double, and sometimes triple pinnated leaves, which, as the plant advances in age, become gradually less compounded, till at length they degenerate into simple pinnated leaves. Certain species of the genus *Mimosa*, lately discovered on the coast of New Holland, and which differ from all others hitherto known with simple leaves, shew in their infancy very compounded double pinnated leaves. The *Amyris*, therefore, appears to be nearly related to the family of *Lomentaceæ*; and hence it may be reasonably conjectured, that in some of the species pertaining to the former, the leaves may, in their infant state, be more compounded than in others.

Upon comparing the delineations of this plant, as given by PROSPER ALPINUS, and by Mr. Bruce, in the fifth volume of his Travels, it seems difficult to point out any perceptible difference between them. The former, in his "*History of the plants of Egypt*," furnishes us with a plate representing a figure, the lower leaves of which are ternate, and the upper ones pinnate; these last again are compounded partly of five, partly of seven leaflets. The drawing given by Mr. Bruce is incomparably better and more accurate, although the leaves are not exhibited with uniformity, as they are sometimes ternate, and in other places pinnate. The pinnate leaves throughout consist of five leaflets only; in all other respects, the single pinnate leaves excepted, this representation of the *Amyris Gileadensis* agrees very exactly with one published by Professor VAHL, in his "*Symbolæ Botanica*." It should be remarked, however, that Mr. Bruce has seen a full-grown tree, and from the figure given by Alpinus, it is highly probable that he was acquainted only with young trees of this kind. FORSKAL, another botanical writer, from whose collection of plants Professor Vahl borrowed his representation of the balm-tree, had made his drawing perhaps from an old tree. The plant from which Gleditsch was enabled to furnish his account and delineation,

was probably a very young one, and had been collected in the earlier years of its growth. Upon the whole, the dissimilar descriptions and representations of this plant given by naturalists, may be so far reconciled as to justify the conjecture, that the *Amyris Gileadenfis* and the *Opobalsamum* of Linnæus are not two distinct genera or species, but that they are virtually specimens of the same plant, for which the former may serve as the generic name.

To illustrate the representation here annexed of the *Amyris*, it will be proper to accompany it with an accurate description. According to Mr. Bruce's specimen, it is a tree of an inferior size, not unlike a small cherry-tree; its height from the root to the crown, or expansion of the branches, being only five feet two inches, and the diameter of the trunk not exceeding five inches. The branches spread to a considerable distance around it, yet the crown, in general, is not much higher than the trunk. The root is of a red colour; the bark of a brownish grey, somewhat like the young branches of a cherry-tree. Its wood is light, and of a loose texture, so that it will not admit of polishing; and in many respects, it resembles the wood of our common willow. The tree itself presents no very agreeable appearance, as the wide-extended branches make the crown of it look stunted and flat at the top, as is frequently observed in trees on our coasts, exposed to sea-storms, or violent northerly winds.

The leaves are small, and situated close to the branches; a circumstance which gives the tree a naked appearance, although in reality it abounds in foliage\*. The leaves themselves are sometimes ternate, sometimes pinnate. On the young branches, between the leaves, there appear single flowers, and occasionally two or three white flowers, with short stalks, close to each other.

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\* Mr. Bruce, on the contrary, asserts, that "it is remarkable for a penury of leaves;" and likewise maintains, that "a part of the bark is of a reddish brown," after having said, immediately before this limitation, that "the wood of this tree is covered with a smooth bark of bluish white, like to a standard cherry-tree," &c.

Indeed, we need not wonder at such little inconsistencies when we read the following confused and imperfect description of the parts of fructification, which we quote *verbatim* from Mr. Bruce's *Travels*: "The flowers," says he, "are like that of the accacia-trees, white and round, only that three hang upon three filaments or stalks, where the accacia has but one. Two of these flowers fall off, and leave a single fruit; the branches that bear this are the shoots of the present year; they are of a reddish colour, and tougher than the old wood: it is these that are cut off, put into little faggots, and sent to Venice for the Theriac, when bruised or drawn by fire; and formerly these made the *Xylobalsamum*." — *Bruce's Travels*, Vol. V.

The calyx is undivided, campanulous, four times indented, and remains till the fruit is ripe. At the bottom of the calyx, close to the receptacle, there appears a yellow ring, which, according to some writers, is the nectarium. The corolla is polypetalous, the leaflets are of a linear form, and incline towards each other. It has eight stamina, and the filaments are shorter than the corolla, capillary, somewhat bent, and are situated on the yellow ring which appears at the bottom of the calyx. The anthers are double, of a yellow colour, and oblong. The receptacle is inclosed within the calyx, and remarkably small; the stem is short and diminutive; the cicatrices or impressions blunt and square. The fruit (*drupa*) is of a juicy nature, being about the size of a gooseberry, and marked externally with four small furrows. It is filled with a tough viscid juice, and contains a nut which incloses one kernel of seed only.

Considerable deviations are frequently observed in the number of its parts; thus, for instance, the calyx has been found five times indented; also, five petals or leaflets have been noticed, and ten stamina.

#### EXPLANATION OF THE PLATE.

(A) A small branch of the *Amyris Gileadensis*, nearly in its natural size. (B) The flower somewhat magnified. (C) A specimen of a branch with fruit in its unripe state. (D) The Calyx. (E) The fruit in its natural size, with transverse and longitudinal sections.

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### *On the practical Advantages of the Use of Flannel worn next the Skin; by Dr. WILlich.*

IN conformity with the invitation held out in the Prospectus of this Journal, which is open to the investigation of every subject, in the various departments of medical science, if the matter under consideration be sufficiently interesting and deserving of notice, I presume to insert the following explanation.—I conceive it a duty incumbent on every author, to take the earliest opportunity to correct any ambiguities, or prevent misconstructions, to which any doctrines or statements in his publications may be liable, especially if the subject in question relate to matters of practical importance.

In my late work, intitled, "*Lectures on Diet and Regimen*," I have decidedly opposed and controverted the novel opinion, respecting *the use of flannel next the skin*, which has been maintained and spread, even in familiar life, among those who are hardly competent to judge for themselves, but implicitly rely on the advice of their medical friends. To such, therefore, and particularly the readers of my book beforementioned, I shall discharge an obligation which is no more than strictly due, by placing the

dispute, or difference of opinion, on this popular subject, in such a point of view, as will enable them to deduce a just conclusion, whether or not the wearing of flannel, under particular circumstances, be useful or detrimental to health.

Having observed in my "*Lectures*," p. 235, in the section "*On the immediate Covering of the Skin*," that "not only analogy, but experience likewise proves, that wool worn next the skin has indisputable advantages over all other substances;" and having stated the reasons for which it stands so eminently recommended as a part of under-dress, together with the good effects, and superior advantages with which the use of it is generally attended, I have proceeded to express my surprise (p. 237), "that any individual, however great his reputation, should be whimsical or hardy enough to dispute matters of fact, merely with a view to establish a favourite hypothesis."

Not inclined to retract a single word of this bold assertion, although I profess the greatest veneration for the talents, learning and genius so happily blended in the author of "*Zoonomia*," I shall content myself (and herein, I trust, satisfy my readers) with laying down the *conditions and modifications*, in what relates to the use of this substance, as nearly as possible, in the words of the celebrated HUFELAND, the author of the "*Art of prolonging Human Life*;" a valuable work, of which the second edition has lately appeared at Jena, with considerable additions and improvements.

As I have in no part of my Lectures recommended the use of flannel to children or young persons, I do not hesitate candidly to quote this learned writer, even though his opinion should appear to vary in some measure from my own: for, as every medical man claims the privilege of determining agreeably to the notions formed by his reason and experience, I may be permitted to differ from others, where I cannot pay homage to theory alone, and where I conceive there is a sufficient number of facts to warrant the justice of my conclusions. Having previously described the general properties and effects of flannel, Mr. Hufeland expresses himself to the following purport: "Upon the whole, I am of opinion, that it would not be advisable, at least to children and young persons, *universally* to adopt a woollen texture for the covering of the skin; particularly as this dress requires a more frequent change to promote cleanliness, and consequently would produce a contrary effect among the lower classes of people.\* It is, however, a salutary dress

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\* To answer this objection satisfactorily, I beg leave to refer the reader to my arguments on the same subject, discussed page 238, and foll. of the "*Lectures on Diet and Regimen*."

to those who, in all probability, have commenced the second half of their life; to all cold and phlegmatic temperaments; to all who lead a sedentary life; to individuals subject to catarrhs or frequent colds, gout, diarrhoea, and partial congestions of the blood; to all nervous patients and convalescents from severe chronic disorders; to persons who are too susceptible of the impressions of the atmosphere; and lastly, in such climates and pursuits of life as are exposed to frequent and sudden changes of air. It is, on the contrary, hurtful\* to those, without exception, who are already troubled with violent perspiration, or with cutaneous eruptions, and who cannot afford frequently to change their under dress. Woollen drawers are highly pernicious to young persons."—And even in those cases where flannel next the skin is obviously conducive to health, Mr. Hufeland recommends only such a texture of wool as is sufficiently porous, and neither too rough nor too thick. Coarse woollen stockings, in winter, and thin ones in summer, ought, in his opinion, to be more generally worn. Those persons, lastly, who are in a good state of health, and have no particular reason for wearing flannel, or whose skin is too irritable, may find it, he thinks, beneficial to wear a cloth fabricated of a mixed texture of cotton and linen.

London, Feb. 2, 1799.

A. F. M. WILlich.

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*Remarks on the Influence of the Brunonian System on the  
Practice of Medicine; by Professor HUFELAND.*

IN the fourth volume of "*The Journal exhibiting the Practice of Medicine and Surgery*," published at Jena, we observe a curious essay, designed as an answer to the following singular and interesting question:—"What influence has the system of JOHN BROWN hitherto had on the practice of medicine? and in what particular respects has it changed, improved, or vitiated the medical art?" The ingenious author of this essay, Professor HUFELAND, (who is likewise the Editor of the Journal above-mentioned) admits, in concurrence with many other eminent physicians in Germany and England, that the inventor of this doctrine was a man of considerable genius, and that his theory is replete with novel and excellent ideas; notwithstanding which, it by no means merits the name of a *system*, as it every where presents evident chasms and defects. The *constituent* part of medicine, as an art, must necessarily rest on the observation of facts, or what we call experience; theory is of service merely  
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\* Mr. H. doubtless meant to say, that it is *then only* hurtful, if none of the external conditions before specified take place; which again render the wearing of flannel salutary to the individual, even in cases apparently dubious.

in the *regulative* part of it, and must invariably accommodate itself to fresh modifications and changes, whenever experience shall pronounce them necessary. The Brunonian doctrine appears very plausible and consistent in theory, but is liable to this material objection, that it frequently and essentially disagrees with matters of fact and experience. The principal point, therefore, to be considered is, whether the Brunonian mode of representing subjects in medicine, has a tendency to facilitate the acquisition of medical knowledge, and to improve the method of curing diseases?—The learned Professor seems inclined to put a negative on this question; and observes, that Brown's division of diseases into *sthenic* and *asthenic*, is only *apparently* simple and easy, but that it is in *reality* a matter of considerable doubt and difficulty to distinguish them from one another with precision; and there are certain distempers, in which it is almost impossible to trace and discover the symptoms of the sthenic and asthenic constitution. It is further difficult to establish clearly, where there is *direct*, and where there is *indirect* debility; to ascertain to what degree this subsists in the body, and determine what species of stimulus ought to be applied to it. In our opinion, medicine can derive little *positive* advantage from the multiplication of theories, however ingeniously framed, if they be not founded on the basis of actual observation and experience. Instead of indulging the modern rage for *generalization*, we ought previously to collect a sufficient number of analogous facts; and, being in possession of these, we might gradually and cautiously venture to reduce them to particular classes, orders, &c. But as this result presupposes long and attentive investigation, by a cool, persevering, and unprejudiced mind, (circumstances and qualifications but rarely united in *one* individual) there is little hope of seeing a *theory* of medicine, or a *System of Nosology* established, which in the present progressive state of medical and physical science, will be found of such unperishable materials, as to stand the test of ages.

*Additional Remarks on the preceding Subject,  
by a Jena Reviewer.*

BROWN was unquestionably a man of an enterprising temper, and peculiar boldness: a man of genius; one who thought freely for himself, disregarding mere authorities and opinions, however sanctioned by the venerable *imprimatur* of time. Had he been so fortunate, by a favourable concurrence of circumstances, as to establish the stability of his principles on extensive observation and clinical experience, he would indeed have rendered essential services to medicine, and attained the praise of uncommon merit in this science. But whoever is anxious to obtain celebrity,  
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and to contribute *real* assistance to the *practice of the healing art*; will find it no easy matter to accomplish this desirable end by solitary disquisitions in his study-room: he must range through a circle of patients; examine and consult with them; and these, again in like manner, with him. Old and experienced practitioners will readily discover whether the author or founder of a system be in fact a stranger to the diseases he attempts to define or arrange; if in only a few instances they espy his weak side, and find his account of the progress of a disease inconsistent with the path of Nature, his pretensions are instantly decried; and his whole system is placed on the condemned list. Brown was a *luxuriant genius*, and his medical eccentricities frequently exhibit somewhat of a marvellous, if not even a monstrous appearance. We may, however, easily understand how it happens that this *soi-disant* system is now so fondly caressed and honoured with approbation, especially by young practitioners, before they can have treasured up a fund of original experience; as, thus fortified, they approach the bed of the patient with a certain conscious air of veteran firmness. In the aphoristical doctrines of Bruno, they find every subject of this complicated art treated in a much easier, more concise, and convenient manner, than in the old-standing authorities of former ages; instead of studying, in well-arranged elementary treatises, the nature of every disease, according to its different stages, symptoms, &c. and making themselves acquainted with methods of cure adapted to the particular state of the disorder, as well as the peculiar constitution, temperament, and external conditions of the patient; they congratulate themselves that such diffuseness is *now* perfectly unnecessary, innumerable diseases being classed under one head, and treated in a similar manner, in this comprehensive mode of classification; for instance, in hæmoptysis, as well as in diarrhoea, hysterics, &c. &c. Brown indiscriminately recommends the use of chalybeats, rum, opium, and the like. This, surely, will be more readily understood in theory, and followed in practice, than the old elaborate, or say pedantic diffuseness, by which the study of medicine is rendered difficult to the tyro, and the practice of it puzzling, if not baffling to the beginner.

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*On the Effects of Abstinence on the Approach of acute Diseases;  
abstracted from the original Papers of Dr. E. MILLER, of  
New York.*

THE following fact seems to deserve more attention than it commonly obtains:—In a district of the United States, distinguished for the prevalence of the epidemic diseases of summer and autumn, it is often asserted  
by



by sensible and acute observers, that they are accustomed to obviate the attack of fevers, apparently approaching, by *rigid abstinence* from food. This abstinence, begun as soon as they perceive the feelings of indisposition, usually known to be the fore-runners of fever, is continued till such feelings cease, till appetite be restored, and generally, indeed, till the calls of hunger become importunate. On different occasions, this process is of various duration, sometimes twenty-four, thirty-six, and even forty-eight hours, according to the nature and exigencies of the case. The success of this regimen is commended by such as have experienced it, in stronger terms than would be proper here to repeat, and perhaps stronger than the reality of the case can justify.

Although the observation abovementioned comes, in the present instance, from a popular source, the effects of abstinence, in obviating the approach of acute diseases, have not escaped the notice of the most eminent physicians. In the writings of HIPPOCRATES, we perceive the strong impression he had received on the subject. SYDENHAM is still more explicit. In his account of the continued fever of the years 1673, 1674, and 1675, considered by Dr. CULLEN as a variety of synocha, or inflammatory fever, it is asserted that he often cured this, as well as other kinds of fever, in the beginning, merely by directing diluents, and prohibiting every kind of aliment. Thus he relieved his children and intimate friends, (to use his own words) *by making them fast strictly for two or three days*. And, besides medical authority, we may also adduce, in favour of this mode of preventing diseases, the recommendation and practice of many men of letters, who have adopted it with the greatest zeal. The sedentary lives of such persons, diminishing keenness of appetite, and augmenting the burden of repletion, and their experience of higher intellectual power in a somewhat diminished degree of bodily vigour, may perhaps account for their attachment to this remedy.

After having pointed out the great advantages of total abstinence, at the commencement of acute diseases; explained the important functions of the stomach in the animal system; and detailed with precision the particular states of the body, as well as the various cases in which abstinence is attended with beneficial effects, the author concludes this valuable paper with the following pertinent and ingenious remarks:—

“ If the art of preserving health and prolonging life chiefly consist in a frugal and sparing use of stimuli, and adapting them with caution and skill to the fluctuating circumstances of the vital principle, we shall surely find  
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still stronger motives to apply this doctrine at the approach, and in the treatment of diseases, when noxious powers of such preternatural violence invade the body, baffle every remedy, and stimulate it to death. The regulation of this vital principle, here denominated excitability, the preservation of it when present, and its restoration when deficient, the restraint of excitement within the bounds of moderation, the prohibition of all wasteful and undermining excesses, will probably hereafter, at some more enlightened era of medicine, form a system of rules for the management of health, and the prevention of disease, for the enjoyment of sense, and the refinement of intellect, which, instead of the present feverish dream of human life, will present a consummation of improvement and happiness, which we now ascribe to superior beings,

“ I have thus undertaken to examine a noted popular observation, to inquire into its truth, and to demonstrate its consistency with the most established principles of the animal economy. If I do not mistake, it has been proved, that abstinence will be often a complete, generally an useful, and almost always a *safe means of obviating the approach of acute diseases*. And, in a word, if it were possible to offer to mankind a maxim of universal application to the treatment of incipient fevers, in all their variations and circumstances, I should be inclined to hazard the following aphorism: *When symptoms, denoting the approach of acute diseases, are discovered, abstain, for a proper length of time, from all aliment.*”

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*Chemical Remarks on Manures:—By Dr. S. L. MITCHELL,  
of New York.*

IN an ingenious and elaborate essay, published in the “*Medical Repository*,” of New York, the author has endeavoured to prove, how nearly *physic* and *farming* are allied to each other. He premised an inquiry into the nature of *septon* (azote), and its relation to other bodies; and after having stated the opinions entertained in different ages with respect to this acid, which at one time was termed *acidum primogenium*, at another *acidum universale*, *acidum vagum*, *acidum atmosphericum*, *acidum areum*, &c. &c. Dr. MITCHELL directs his inquiry into the particular phenomena, which a country rendered unhealthy by its uncommon fertility, or a dung-heap, on account of its richness, presents to the mind; and, in order to illustrate the history of azote, or the principle of putrefaction in manures, he gives a list of forms or combinations, in one or the other of which this principle exists, either in a pure or combined state. Our limits not permitting us to transcribe

scribe the particulars of this interesting disposition, in which the Doctor enumerates the principal compositions of *septon* with other bodies which relate to agriculture, and accompanies each of them with remarks, tending to illustrate their respective value, as well as their relation to other substances, we shall extract only the following :

“ The acid properties of some manures, and the alkaline or absorbent nature of others, highly deserve the consideration of agriculturists. Without paying attention to the action of the former, of these upon the latter, the formation of manures, and their operation upon plants, cannot be understood. These might easily be reduced to a small table, and their affinities traced.

*Acids commonly present in Manures.*

*Alkalies very common in Manures.*

*Septic*, or nitrous acid.

*Carbonic* acid, or fixed air, both very common.

*Sulphuric* acid, sometimes.

*Muriatic* acid, very frequent in the neighbourhood of the ocean, and abounding on farms, where much salt-fodder is consumed.

*Phosphoric* acid, not unfrequently evolved during animal decomposition.

*Pot-Ash*, or *vegetable* fixed alkali, very common.

*Soda*, or mineral alkali.

*Ammoniac*, or volatile alkali, now and then.

*Lime*, or calcareous earth, very common indeed.

*Magnesia*, sometimes.

*Clay*, almost always.”

In the second number of the American “*Medical Repository*,” we meet with a letter written by the same author, and addressed to N. W. BARRETT, Jun. from which we communicate the following remarkable passages—“ It must be a welcome intelligence, that the collected mass of nuisance which we now are, with such happy success, engaged in removing from the city of New York, is convertible, by the powers of vegetation, from poison to wholesome articles of food. There must be high satisfaction in contemplating how the purity and healthiness of the towns may contribute to the thriftiness and wealth of the surrounding country. And to all of us it is matter of the utmost moment, to receive additional proofs of the power of the alkaline qualities of the *lime*, *pot-ash*, and *soda*, thrown out and scattered about the streets, to neutralize the acid vapours which excite fevers and plagues among us\*, and convert them into the richest of manures; and thus, by one operation,

\* Dr. HERMSTADT of Berlin has lately given additional confirmation to the extensive utility of this simple process of purifying the atmosphere. He directs his asthmatic and consumptive patients, to expose pot ash or pearl-ash in a dry and powdered state, upon glass

operation, clearing the atmosphere of its noxious fumes, and preparing nourishment for the vegetable world.

"I hope one day to be able to add to these testimonials, the result of my own experience on these carbonates and septites of lime, pot-ash, and soda, in raising crops of barley and wheat; and in the mean time entertain the hope, that further particulars concerning the operation of *street-manure*, in raising Indian corn, will be given us by the gentlemen who have introduced the experiments.\* I think we are getting on the right track of inquiry about these matters, and shall soon be able, for it is most certainly in our power, to make pestilence submit to municipal and agricultural regulations."

*On the artificial Impregnation of Animals. Extracted from a Letter written by the celebrated Naturalist, SPALLANZANI to L. M. A. CALDANI, Professor at Padua.*

"ON this occasion I shall communicate to you the result, or rather the confirmation, of my former observations relative to the artificial impregnation or fecundation of animals. The gentlemen who made this extraordinary experiment with a bitch, are Signors PETER ROSSI and NICCOLA BRANCHI, Professors at Pisa; the former communicated to me the following account:—

"On the 12th of January, 1792, I locked up a bitch in a room to which nobody but Dr. Branchi and myself had access; we possessed the key, and therefore could not be deceived by any third person. The animal was of the larger kind of fleecy spaniels (*canis aquaticus pile crispo infar ovis*; LINN. *Syst. Nat.*); was about three years of age, and had twice before produced puppies. We could not discover the smallest symptoms of gravidity.

"Between

or china plates, one inch deep, to the air of bed chambers and sitting-rooms: in the course of four weeks the pot-ash will be completely saturated with aerial acids, or carbonic acid gas, the most irrespirable part of the atmosphere.

\* In one of these experiments we are informed, that the crop raised by Mr. John Stevens of Hoboken, amounted to 118 bushels and two quarts of Indian corn (in the ears) per acre; in another, by Daniel Ludlow, of Westchester, the produce was, upon an average, 98 bushels and 14 quarts per acre;—but much greater was the fecundity of the soil in the neighbourhood of Elizabeth-Town, where 155 bushels of Indian corn in the ears have been produced by one acre of land; and this, it is added, falls vastly short of what may be obtained from an equal quantity of ground.

" Between the 18th and 25th of January we had unequivocal proofs that she was in a state prone to copulation; the vagina and the external parts of generation being swollen, and at the same time tainted with blood. This circumstance induced us to undertake the artificial impregnation in the manner described as under.

" We collected about fifteen grains of semen discharged by a very sanguine young dog, into a glass-vessel previously warmed; and having absorbed it by a fine syringe, heated to the 30° of REAUMUR's thermometer, we immediately introduced it, by means of this instrument, into the organ of generation of the above-mentioned bitch. Every precaution was taken to lose nothing of the semen, unless what had perhaps adhered to the inner side of the syringe.

" To conform to nature as nearly as possible, we repeated the same operation on the day following; with extraordinary care we introduced eighteen grains of semen taken from the same dog; and now the animal seemed to evince by its motions, that she felt agreeable sensations on the occasion.

" On the 28th of January we repeated this artificial process a third time with twelve grains, and on the following day, for the first and last time, with twenty-one grains of the semen. After this last impregnation, the bitch no longer shewed the *oestrus veneris*. On the 28th of February we found the abdomen soft, thicker than usual, and the teats swelled: so that we had the strongest reason to believe the experiment had succeeded. From this time the bitch was set at liberty.

" On the 27th of March, being the sixtieth day after she had lost the *oestrus*, and the usual period of gestation in these animals, the bitch on whom the above experiment had been made, produced five sprightly puppies, one of which was of the female, and three of the male sex; all of them bearing a perfect resemblance to the parent animals, as well in the structure of their bodies, as in the colour of the hair, and other particulars.

*Practical Remarks on the two most prevailing Species of Cramp in the Stomach, by D. G. C. CONRADT, M. D. Resident Physician at Northeim in Germany.*

THE first species of spasm in the stomach originates in extreme debility, relaxation, and atony in that organ, whatever may have produced it as the primary or predisposing cause. The method of curing this distemper consists in the proper administration of alteratives and tonics, particularly those of the bitter kind; in adhering to a regular diet, and lastly, in the use of chalybeates, after the necessary evacuations have been premised. This species of cramp is not so common as the next, but it merits notice here on this account chiefly, that the following may be the better illustrated by the comparison, according to the old adage: "*Opposita juxta se posita magis elucescunt.*"

The second species of spasmodic affections of the stomach arises from increased irritability and sensibility of the nerves connected with this important organ.—Briefly, every thing here exhibits a different appearance from what is observed in the former species, so that the first may not improperly be called the asthenic or passive cramp, and the second the sthenic or active. A good appetite and prompt digestion, a red and florid complexion, a strong and robust constitution, an irritable, active, and at the same time rigid fibre, are the characteristic symptoms of this second class. The affection is not violent in the beginning, but a pressure, stricture, and griping, rather than acute pain, is felt in the region of the stomach. The patient has an oppressive sensation, as if something, not unlike a nail, were fixed behind the stomach: if the attack increase in violence, he complains of stitches in the breast and towards the back, and endeavours to procure relief by shifting his posture. The principal paroxysms are observed to take place generally in the afternoon, in consequence of bodily exercise immediately after dinner, the use of acid food and drink—and particularly after giving way to gusts of passion, such as terror, anger, grief, and anxiety.—Nothing is better calculated to prevent the approach of this disorder, than a wholesome and easy digestible meal, which, with the moderate use of good old wine, will greatly contribute even towards effecting a cure, after it has become habitual.

This affection is often contracted or induced by persons subject to passionate emotions, on their neglecting to take an emetic occasionally; it is not, in general, attended with acidity, but rather, and most frequently, is produced by a bilious acrimony; and it at length almost invariably dege-

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nerates into a nervous habit. This species of the disease is found to prevail most among the lower classes of people, whilst that arising from atony, or relaxation, is more common among the opulent and epicures.

In its first attacks, and before it become habitual, the cramp may be considerably relieved by emetics, which frequently evacuate bile, together with an acid and corrosive matter. The following remedies, moreover, generally produce a decided effect in checking its actual progress: 1. Chalybeate waters, and especially that of Pyrmont\*, which has been observed in a number of cases to afford instantaneous relief; 2. the *valeriana fluvialis*, the leaves of which, when reduced to powder, should be taken three times a day, in doses from two to four scruples, in cold water; the powder however must not be kept longer than a few days; this remedy is preferable even to the chalybeates; 3. the frequent drinking of cold water, and partial cold bathing of the region about the stomach, by which that preternatural sensibility in the digestive organs, so apt to generate the spasm, is effectually extinguished; and 4. in the slighter cases of the disease, pills compounded of assafoetida and the extract of the valerian. will be found generally sufficient to remove the complaint.

If the disorder has become inveterate, and perhaps incurable, palliatives will be the only remedies we can resort to; and of these, opium and castor are the most efficacious; they are, indeed, not unfrequently supposed to be of eminent service, even in scirrhotics of the abdomen.

Dr. CONRADI concludes with an injunction, after the administration of emetics, in the first stages of this complaint, to avoid all bodily exercise, as this has a tendency to produce a return of the cramp.—Magnesia will be likewise of service here, but neutral salts are not advisable; hence the plan of evacuating humours is generally productive of mischief.—The remedies which on trial are found beneficial, should not be too suddenly, but gradually relinquished.—In complicated cases of debility, our attention should be directed to the tonic and strengthening plan. The calx of Bismuth, the Doctor observes, has never proved successful, even in the largest doses; although this powerful substance has been lately extolled by several practitioners as an almost infallible specific.—With respect to diet, he advises to avoid wine and strong beer between meals; long fasting, honey, gingerbread, sweetmeats, and all kinds of pastry are also obviously pernicious.

\* An artificial Pyrmont-water may be prepared by boiling three ounces of iron-filings, and six ounces of cream of tartar, in a cast-iron pot, with eight pints of water, for about four hours, so as to reduce it to one half of its quantity; after which it should be filtered through linen or cotton, and preserved for use in bottles closely stopped W.

nicious. Instead of beer at table, persons subject to spasms from debilitating causes, should drink distilled water; and where this cannot be conveniently procured, they may substitute river-water previously boiled, and allowed to stand till it be perfectly cold.—Lastly, to the long list of substances detrimental to the health of patients afflicted with the cramp, we may add the following articles of diet, ham, bacon, *fat* of pork and mutton, but above all, the habitual and immoderate use of *hot and strong tea*, which is one of the most powerful causes predisposing to that affection.

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*On the probable Sensations of the Head, after being severed from the Body.*

**A**MONG other singular questions lately agitated in France and Germany, the following is not the least curious: "*Whether the separated head of a person suffering on the scaffold be still, for a certain time, conscious of its sufferings?*" This question was proposed at the time when the guillotine was first adopted as the instrument of public execution in France; and the writings which appeared on this apparently whimsical subject, were numerous. Prof. SOEMMERING maintained in a particular treatise, first printed in the *Moniteur*, that the consciousness of the sufferer still continued for some time; and the Professor is so far persuaded of the truth of this assertion, that in his opinion, the severed head would still emit sounds, if it were not separated from the organs of speech, as well as those of respiration.

Prof. WEDEKIND contravened this opinion, and defended the French method of beheading as the quickest and least painful species of death, by which all consciousness is at once intercepted and annihilated: he says, that the blood-vessels of the separated head are, *ipso facto*, instantly and completely emptied of the blood, and that the organ of the mind is thus rendered totally inactive; consequently, the head cannot be conscious, either of its former or present state.

Mr. CLOSSIUS, of Tübingen, though not fully convinced that the head, in a dissevered state, retains consciousness, yet considers this fact as highly probable, and on the whole, agrees in opinion with Soemmering. He dwells at considerable length, in his treatise "*On Decapitation*," upon the objections started by Wedekind, and endeavours to prove that the blood-vessels of the head are by no means so quickly and completely emptied, as the Professor is disposed to think; and that even without an actual circulation of the blood, there may still remain some activity and energy in the brain. He produces in support of his hypothesis, a variety of arguments,



derived partly from analogy and a comparison of the symptoms of a person beheaded with those observed in similar situations; and partly from appearances which have been noticed in individuals executed by the sword or guillotine. On account of this probability, ought not the dictates of humanity to be listened to, and instead of beheading, should not another mode of execution be devised, by which the deadly blow, and the complete annihilation of the natural structure of the brain, might take place at the same instant? Such, for instance, would be a sudden and violent convulsion of the brain, a mortal thrust on the stomach, and the like.

Another German writer on this subject, C. A. ESCHENMAYER, combats the opinion of Soemmering, but deals so much in confused philosophic speculations and vague hypotheses, that we shall forbear taking notice of what he advances; and proceed to give some account of a French treatise, entitled, "*Opinion du Citoyen SUE, sur le Supplice de la Guillotine;*" à Paris, 16 pp. 8vo.—Citizen SUE, not contented with asserting, that the head still continues to live, and to feel the most excruciating pain, as long as the blood remains warm in the smallest vessels, maintains that the lower part of the body also must suffer, after the head has been struck off. His arguments are not a little curious. He compares the act of beheading with that of amputation of a limb; as it has been observed that persons have felt, or at least imagined that they felt, pain in a limb, after being separated from the body by a surgical operation, as also after a dislocation of the vertebræ; that the upper parts of the body remain sensible and alive, while the lower extremities are lifeless and insensible to pain. The incongruity of this mode of reasoning from analogy is so palpable that it requires no refutation.

The author quotes various instances of preternatural births, or monsters born without a brain, and spinal marrow, on which he grounds his conjecture, that the lower extremities of the body are still sensible to pain, after a separation of the head has taken place. But, besides the obvious inconsistency in this comparison, it requires to be previously proved, that such monsters have ever had consciousness, and suffered pain, on account of the unnatural structure of their bodies. The remarkable facts witnessed by the author, during a number of executions at Paris, and related in this treatise; for instance, the singular phenomenon of smiling, or rather of blushing, in the trunkless head of Madame CORDET, the assassin of MARAT, are no doubt curious, but not conclusive.

The subject of dispute is indeed such as admits of no positive decision; for the feelings of a person, after the mortal blow has been given by the sword or guillotine, cannot be ascertained, and we may pronounce it impossible

able for human reason to form an adequate conception of their greater or less duration. If there exist a something within the body, which after its dissolution hastens towards another destination, in which we shall not be insensible to agreeable or disagreeable sensations, this something will, no doubt also possess the consciousness of its situation, whether the body has been destroyed by a putrid fever, by poison, by a concussion of the brain, or by any other mode of depriving or taking away life. It does indeed not, here, depend upon the state of the circulation of the blood, or other relations, as connected with the body; for it must be admitted, that this something, if it continue after and without the body, has no connection with corporeal causes, organs of the mind, or the like.

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*Remarks on the practical Utility of Galvanism, or Metallic Electricity, with a View to ascertain its Effects on muscular and nervous Irritability.*

THE experiments of GALVANI, on the irritability of the muscular and nervous fibre, by the well-known application of metallic stimuli, have long excited the curiosity of medical practitioners, and induced many of them to address the query—*Cui bono?* At length M. VON HUMBOLDT has published his “*Experiments on the stimulated muscular and nervous Fibre, with Conjectures on the chemical Process of Life in the Animal and Vegetable Kingdoms,*” (in German) Vol. I. 8vo. pp. 495, with eight plates. The very ingenious author of this work is considered in Germany as the *founder of a rational system of ANIMAL CHEMISTRY*. The nature and tendency of his unremitting inquiries will be more clearly understood from the following characteristic passage extracted from the preface:—“For several years,” says he, “I have been assiduously employed in comparing some phenomena of animal matter with the laws of inanimate nature. During these researches, I have succeeded in experiments, which promise to conduct us somewhat farther in discovering the chemical process of life. I have found that the separated organ of an animal, being provided with irritable and sensible fibres, may in a few seconds be raised from a state of the most complete insensibility, (inexcitability) to the highest degree of susceptibility of a stimulus, and *vice versa*. This alternate change of increased and diminished vital power may be produced in a nerve, four or five times, by the same act of volition, with which the hand of the artist extends or relaxes the strings of an instrument. I have stimulated the organs of animals with oxygenated muriatic acid, alkalis, nitrous acid, the calx of arsenic, opium, and

alcohol, for some hours successively, and yet they emerged from these struggles with the contending elements, almost without any material change of their nature. I have observed, that animal bodies possess the power of operating from a distance, and have endeavoured to exhibit to the senses this circle of action, which decreases together with the power of life. I think I can demonstrate, that the irritability of matter does not depend upon the quantity of *oxygen* alone, as is conjectured by modern physiologists, and as my own experiments upon plants appear to insinuate; but that *azote* and *hydrogen* have a more important share in this power; and that every thing herein depends upon the *common operation and the antagonism of a plurality of substances.*"

We shall not attempt here to abridge this work, or to give an abstract of the numerous experiments instituted by the author, on animal and vegetable substances, under the most diversified circumstances and relations, as the task would be too complicated and laborious. The reader will be better gratified by learning the general result of Mr. Humboldt's inquiries into the *practical utility of Galvanism*; for the metallic stimulus invented by Galvani has been lately exhibited by another German writer, Mr. CREVE, as the most certain criterion for distinguishing *asphyxia* from actual death. Humboldt is of opinion that this stimulus is not an infallible mode of ascertaining death in cases of asphyxia; because, 1. the electric fluid still evinces symptoms of the susceptibility of stimulus in a nerve, which can no longer be sensibly affected by that of Galvani; 2. because the experiment can be made only on *some* parts of the body; and the want of excitability in these, does not infer the same defect in the *whole* nervous system; 3. because we have instances in which the metallic stimulus has proved ineffectual in those organs which shortly before, and even after its application, could be voluntarily moved; and, 4. as it is a matter evidently doubtful, that parts which for a time appear to be deprived of all irritability, can in the sequel again recover it.

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*On the most proper and beneficial Application of Electricity in Diseases: abstracted from the Essay on that Subject, by Professor IMHOFF, of Munich.*

IT cannot be denied, that *medical electricity* has been only of late years reduced to a systematic form, and that we are in this respect particularly indebted to the labours of TISSOT\*, CAVALLO, and BERTHOLON. The last

\* The celebrated Tissot was unquestionably the first who treated scientifically on the medical application of electricity, exhibiting also just principles on which to found this process; in his classical letter, '*De variolis, apoplexia et hydrope.*'

last of these meritorious characters framed a peculiar theory, according to which he derived all diseases either from the want or abundance of the electric fluid in the human body. He invented several useful instruments, and his method of applying them introduced a happy medium between the violent shocks recommended by some, and the timid practice of electrifying followed by others. By the exertions of such men, we at length arrived at stable principles, established on the broad basis of experience, by which we were taught, that electricity increases or promotes the circulation of the blood, and produces this effect particularly by what is called the *negative bath*. Thus we learned, by satisfactory proofs, that the electric fluid operates as a stimulating remedy on the animal body.

Meanwhile, the well-known experiments of GALVANI with the metallic stimulus, excited an uncommon degree of attention in the medical world; but the consequent theories were too hastily formed, and pursued with hypothetical fallacy. This species of stimulus is certainly insufficient to afford a sure criterion of actual death, and to ascertain clearly the state of asphyxia, for this additional and obvious reason, that the disposition or tendency of the muscular fibre, to be affected to such a degree as to be thrown into convulsions by the application of metals, is considerably diminished in certain diseases, for instance, the gout and rheumatism; it must, however, be admitted that the nerves are very sensible electrometers, and that the animating principle which pervades them, is forcibly stimulated in the transition of the electric fluid from one metal to another.

Electricity is one of the most powerful stimulating remedies which can be applied to the animal economy. Its effects may be considered both as general and local. Too violent shocks of it at once extinguish the vital principle, which, however, may be again kindled or excited by less powerful shocks. Hence the following positions may be admitted, in general, as correct and established; that electricity promotes the free circulation of the fluids, and particularly the blood; that it accelerates perspiration, and increases animal heat, and likewise promotes all the secretions and excretions of the body.\*

In the application of this powerful remedy, the following hints may be of service, as they are the result of actual experience, and not of speculation: 1. Electricity is attended with pernicious effects in *active* or *sthenic* diseases: 2. it is hurtful when, together with relaxation and debility, an uncom-

\* It may properly be remarked here, that the effect of promoting the secretions and excretions by means of electricity, will then only take place when these have been diminished by atonic causes.

commonly high degree of excitability in the organs of sensation is felt, as well as in those of voluntary motion; and 3. if a preternatural impulse of the fluids, arising from local irritation, prevail in any particular part of the body. In this case, electricity has a direct tendency to generate congestions, or the local accumulation of humours. In atonic collections of matter it is frequently found of service, when the great vital activity of the solids alone is capable of resolving the stagnations; but it is certainly detrimental, if the mechanical power of resistance in the solid parts must, at the same time, be raised; and if the accumulated matter must be previously diminished, before it can be dissolved. Hence the application of electricity has sometimes been highly beneficial in promoting a regular return of the menses; but it has also, in certain cases, been attended with dangerous effects.—It is further of considerable advantage in passive or asthenic diseases, particularly in cases accompanied with a diminished susceptibility of stimuli in the organs of sensation and motion; provided that such disorders, at the same time, be manifest from the periodical returns of uncommon muscular action, or by occasional excess of the sensitive faculty in any particular part. Lastly, the mode of imparting the electric fluid deserves more attention than has hitherto been bestowed upon it; and we ought never to communicate violent shocks, where less powerful ones might answer the purpose. Upon the whole, it appears to be an established maxim that, under the circumstances and conditions above specified, both the electric bath, and the gentle application of the electric fluid to any particular part of the body, are always safe; and that the extraction of sparks under similar circumstances is generally attended with advantage. The more violent methods of electrifying, on the contrary, have been productive of mischief rather than good; so that they ought to be applied to those individuals only, whose excitability is languid, or whose capacity for receiving impressions by external stimuli, is considerably diminished.

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*Observations on the Medical Use and Effects of the Digitalis Purpurea; extracted from an Essay of Dr. MEASE, Resident Physician of the Port of Philadelphia,*

THE Purple Fox-glove is a medicine which, for some time, stood high in the list of the materia medica, but for various reasons appears to have, in some measure, lost the character once formed of it.—The causes influencing the success of the *digitalis*, may be referred to the following heads:

heads: 1. The *season of the year in which the plant is collected* will have a very considerable influence on the effects produced on the system. 2. The *part of the plant employed* ought likewise to be attended to, when forming a judgment of its virtues. 3. A frequent cause of the failure of *digitalis* may be attributed to the careless mode of preparing it for use. 4. The *adulteration of the plant* with other vegetables. 5. The various mode of exhibiting this medicine; and 6. The *particular condition of the patient at the time of its exhibition*.

Dr. MEASE very judiciously comments upon each of these particulars, and more at large upon the last. He examines with some acuteness the different opinions of physicians, relative to this subject, and illustrates them with his own observation and experience on the effects of this powerful plant.—As a specimen of his method of reasoning, we shall quote the following remarkable passage:

“ To account for the success of this remedy in dropsies, and diseases of too much action in the arterial system, is readily done. But, to reconcile the opposite testimony of Dr. WITHERING and others, with respect to their different success in dropsies of too little action, is very difficult: nay, to reconcile the contrary advice of Dr. Withering himself, who recommends the *digitalis* in mania and hemoptoe, ‘with a *bounding pulse*,’ and in dropsies with a *weak* one, is impossible. And here I may repeat a remark I formerly made, viz. ‘That a medicine whose primary operation is the reduction of the force of the arterial system, when this is so intimately connected with the general strength of the body, should only succeed in those cases, where the latter is considerably exhausted, appears not only to be paradoxical, but ill agrees with the uniformity observed in the operations of nature, in other parts of the animal economy.’—It is incumbent on Dr. Withering to account for this apparent opposition in his own sentiments, and to satisfy the doubts of physicians, arising from the action of the remedy being directly contrary to the principles upon which alone certain dropsies can be cured. I may also remark, that it is much to be wished, physicians were more accurate in noting the state of their patients system, at the time of prescribing this and other remedies; and also the state of the pulse at the same time, with its frequency; which, though so constantly stated, is of far less consequence in determining the situation of the system, as to the important point of the existence or absence of the inflammatory disposition, than the former. We should thus arrive with more certainty at the *true* virtues of a medicine, and be able to reconcile the contradictory accounts of physicians, respecting its utility in the same disease.”

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These golden remarks cannot be too often and too seriously repeated, particularly to the junior class of medical practitioners.— Our author quotes a striking passage from a letter of Dr. Withering to Dr. WOODVILLE, published in the “*Medical Botany*” of the latter, in which the inattention of physicians, in the exhibition of *digitalis*, is severely censured, and he concludes with the following practical hints :

“ It may not be improper to add some cautions and observations upon the use of digitalis, not mentioned in the above paper, for the information of those who may not have seen Dr. Withering’s work, and may wish to exhibit the medicine.

“ The Doctor desires the medicine to be given in the doses in an infusion of the plant, which he prefers to every other form, and directs one drachm of the dried leaves to be infused for four hours in half a pint of boiling water, adding to the strained liquor half an ounce of any spirituous water, and an ounce of this infusion to be given twice a day to an adult. If the patient be stronger than usual, or the symptoms very urgent, this dose may be given once in eight hours; and, on the contrary, in many instances, half an ounce at a time will be quite sufficient. (This method of exhibiting the medicine, ought to be continued, until it either acts on the kidneys or stomach, pulse or bowels: to be stopped upon the first appearance of any of these effects; the patient to drink freely during its operation). But, without attending to this rule, I have known the digitalis prescribed in the various forms of decoction, pills made with soap, and in powder mixed with prepared chalk or magnesia; and though the two last substances may not act in any opposite way, yet they may divide the particles, and, by clogging them, prevent application to the stomach, and thus diminish its activity. A tedious decoction will dissipate the virtue of many plants less volatile than digitalis; but, a slight one will no doubt injure it, and ought therefore never to be employed. Pills are often made up with such substances, as render them soluble with difficulty. If we even suppose soap free from this objection, we nevertheless do not know, what secret effects may be produced by it, on particular stomachs, to interrupt the action of the medicine; and certainly it will not be so readily applied to that organ, as in a watery form.

“ In case of *ascites* and *anasarca*, when the patient is weak, and the evacuation of the water rapid, the use of a proper bandage is indispensably necessary. If the water should not be wholly evacuated, it is best to allow an interval of several days, before the medicine be repeated, in order that food and tonics may be exhibited.

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"The flow of urine will often precede, sometimes accompany, and frequently follow the sickness at stomach, at the distance of some days, and not unfrequently be checked by the medicine, especially if given in too large doses. The sickness will sometimes cease, and recur again as violent as before, and will continue to recur for three or four days, at more distant intervals. These sufferings seldom occur, and are no objection to the use of digitalis, neither is a stone in the bladder."

*On the Use of Vomits, in Cases of apparent Death.*

*By a Correspondent.*

A VERY singular controversy, respecting the propriety of administering emetics in cases of suspended animation, having been lately raised and carried on between two medical gentlemen, with some degree of acrimony, my attention has been naturally excited to this important subject; and on the whole it appears to me, that the nature of it requires some further elucidation and discussion.—And as one of our most popular periodical publications has in a manner declined to become the vehicle of *this species of controversy*\*, I shall address myself to your Journal, as the most competent tribunal for investigating and deciding this controverted matter.

It has been frequently observed by able and experienced physiologists, that the great mass of errors and imperfections, imputable to the theory and practice of medicine, have taken their rise from an uncommon fondness for *generalizing* facts without sufficient experience. This propensity to frame theories, and hatch hypotheses, is particularly observable among the junior part of authors and practitioners. However laudable and sometimes beneficial, such theories may prove ultimately, they cannot fail to be attended likewise occasionally with injurious consequences; especially if they be *implicitly* adopted, and applied to practical purposes, by a body respectable for their numbers.

Of this suspicious, if not dangerous tendency, the suggestions of Mr. CHARLES BROWN, appear to be, respecting the application of emetics, for the recovery of persons apparently dead. In the "*Monthly Magazine*" for October last, p. 241, Mr. Brown informs us, that the Royal Humane Society, at their last annual Court of Directors, presented him with a medal for a successful treatment and application in an extraordinary case; that in the directions published by the society, for the recovery of drowned persons, the practice of giving vomits is rigidly interdicted; that,

\* Vide the *Monthly Magazine* for December 1798, p. 416.



that, in opposition to these, and to the decided opinion of Dr. A. FOTHERGILL \* of Bath, he (Mr. Brown) administered an emetic to a girl, thirteen years, of age, who had attempted to destroy herself by drowning in a tub of water; that in the space of about ten minutes the body became convulsed, a large quantity of water ejected from the stomach, and other symptoms of life gradually appeared; and in short, that the patient, by the next morning, was completely recovered. After having thus narrated the apparent particulars of the case, Mr Brown concludes with the following hypothetical remarks:

“ If we consider the general shock which emetics give to the system, and the great probability there is of immediately stimulating the heart by the disengagement of oxygen-gas in the stomach, I think we are fully warranted in having recourse to such powerful aids. I will grant, in cases of congestions in the blood-vessels of the brain, by the imprudent administration of vomits, there are some instances recorded where their use in cases of suspended animation has been attended with fatal consequences.”

It was hardly to be expected, that so bold and novel a process as that of *IMMEDIATELY stimulating the heart, by the disengagement of oxygen gas in the stomach*, should encounter no opposition, even though it were taken for granted, that the emetic used, (for instance, that employed by Mr. Brown in the case before stated, which consisted of a solution of oxyde of zinc in water), contained in it, virtually and actually, oxygenous matter. We find accordingly, a judicious letter, written by N. of Bristol, and inserted in p. 425 of the “ *Monthly Magazine*” for December last, in which Mr. Brown’s opinion is freely animadverted upon; and after explaining in a cursory manner the *primary* effects which emetics produce on the human frame, the letter-writer condemns the general use of emetics in cases of asphyxia, and subjoins the following queries, which Mr Brown brands with the name of *superficial*.\* “ How is oxygen-gas to be discharged in the stomach, and by what chemical process is the disengagement of it to be effected ?” And as Mr. Brown is professedly engaged in a series of experiments connected with this subject, the Bristol correspondent expressed his hopes, that Mr. Brown would be enabled to throw some additional light on it.—Indeed, Mr. Brown himself, in his first letter dated October 18th, 1798, speaks with no little satisfaction of his experimental pursuits, “ *which, when completed, will throw more light on the subject.*” Yet, after the lapse of three months, instead of detailing any of the experiments in which he has since been engaged, in confirmation of his particular hypothesis, or overturning the data laid down by his opponent at Bristol, respecting the operation of emetics in cases of asphyxia,

\* Vide Mr. Brown’s Letter in the “ *Monthly Magazine*” for January, 1799, p. 24.

asphyxia, Mr. Brown appears anxious to avoid the investigation of this essential part of the question, and contents himself with laying before the medical world the following general and extraordinary answer :

“ If, (says Mr. Brown in his last letter in the “ *Monthly Magazine*,” dated January 12th, 1799,) your correspondent N. at Bristol, with all his chemical knowledge of the properties of the different gases, but particularly that of oxygen, cannot comprehend the existence of a fact admitted by all enlightened philosophers of the present day, viz. that substances, such as the oxydes of mercury, zinc, &c. do contain oxygenous matter in solution, and that by a chemical process which takes place in the stomach, and which is admirably calculated to excite our admiration and answer our designs, do readily impart this vivifying principle, to stimulate the vital organs, it is not for me to spend that time in answering such superficial queries, which require only a slight knowledge of philosophical chemistry to solve, and which might be more usefully employed in the exercise of my professional duties.”

How far in this answer Mr. Brown, who seems pretty conversant in the catalogue of mottoes, has really fulfilled the tenour of the quotation with which his last mentioned letter is adorned,

“ *Non ex fulgore fumum, sed ex fumo dare lucem.*”

might be thought invidious to determine here.—We shall take the liberty, however, to express our surprise at the mode which Mr. Brown adopts to silence at once his Bristol antagonist. Would it not have appeared equally candid and worthy of a philosophical chemist, to acknowledge ingenuously the imperfect state of our physiological knowledge respecting the operation of gases, when introduced into the human body; and particularly in what relates to the disengagement of oxygen gas in the stomach, which, according to Mr. Brown, immediately stimulates the heart? We apprehend, it is not by a slight knowledge of philosophical chemistry, that we shall be enabled, even at some future age, to develop the mysterious nature of these powerful agents, viz. the permanently elastic fluids. Perhaps, even Mr. Brown might have added to the merits he already possesses as an author and successful practitioner, if he had furnished us with the opinions of some of the principal writers, respecting the safe and unsafe administration of emetics in cases of apparent death.

After having consulted several domestic and foreign writers on the subject, we shall concisely communicate the result of our inquiries, together with some authorities on which the opinion hereafter given is founded. We ought however to premise, that no precepts can be laid down which will admit of general application in all cases of asphyxia; and, in this respect,

spect, we shall willingly do justice to the limited and guarded manner in which Mr. Brown expressed himself in his first letter on this subject, by saying, that he will relate a case of resuscitation by means of emetics, and "make such observations as the nature of *that* case suggests." In this precision we recognize the medical philosopher; but, as to the promised observations themselves on the case in question, which have probably been forgotten from the pressure of professional avocations, we have been much disappointed, and flatter ourselves that Mr. Brown will not fail to supply us with them on some future, perhaps more favourable, occasion.—We shall now proceed to cite the opinion of the German SYDENHAM, Dr. UNZER of Hamburg, a venerable old practitioner, who, in his "*Manual of Domestic Medicine*," p. 922, treating of the use of emetics, in cases of persons having swallowed narcotic poisons, or being suffocated from the vapours of charcoal, or other species of mephitic air, expresses himself to the following purport: "I do not consider the emetics, in these cases, as nearly so dangerous and hurtful as many physicians are inclined to suppose. All narcotic poisons taken internally require emetics, which have an obvious tendency to alleviate the concomitant symptoms.—According to theory, the brain, if affected or stupified by any of the narcotic poisons, will not feel any augmented oppression from the additional afflux of the blood to the head; an effect generally produced by emetics. But are they to be considered as unavailing in the treatment of persons suffering from narcotic poisons? Is the evacuation of the swallowed venomous matter the only effect produced by them? Have they not at the same time a remarkable effect on the nerves? The celebrated TISSOT, although deprecating the use of emetics, recommends to persons apparently drowned, the immediate taking of the oxymel of squills, or an infusion of camomile flowers, carduus benedictus, and the like; all of which easily excite vomiting, and yet, says he, *they do not act merely as emetics*. They must, therefore, be useful in another way; for, it is well known that all narcotic vapours, frequently of their own nature, excite vomiting: this effect, however, according to Tissot, arises from their pressure on the brain. Admitted: but the voluntary hæmorrhages of plethoric individuals likewise proceed from a force which the arteries sustain; and nevertheless, as such persons are relieved by bleedings, we follow the indications of nature, when we recommend venesection as the safest method of cure. The case is perfectly similar; for this revolution of the stomach alleviates and improves, for instance, the whole condition of a person completely intoxicated. It is certain, that persons in this state never receive injury from spontaneous vomiting; but that they presently become sober, and the pressure on the brain is relieved accordingly as they vomit more or less frequently, during the

the paroxysm of intoxication. Why should then mere theory censure those who order emetics to persons suffocated from narcotic and other deleterious vapours, with evident and unvaried success? It is needless to adduce more arguments against such as are influenced by the simple theory of narcotic action on the brain, and by similar conjectures, which are sufficiently confuted by experience." In several other passages of his valuable work, Dr. Unzer advises the use of emetics in the following dangerous cases: in the *catarrhus suffocativus*; in *apoplexy* arising from a bilious surcharge of the stomach; in palsy of the tongue, *rachia*, in the whooping cough, hæmoptysis, uterine hæmorrhages, the bilious dysentery, and epilepsy.

To prevent, however, any misapplication of this excellent and powerful remedy, it will be requisite also to notice the various contra-indications, in which we must either totally abstain from, or proceed with the greatest possible caution in the use of emetics, viz. 1. In plethoric individuals in general, and particularly such as manifest a disposition to congestions in the blood-vessels of the head, breast, stomach, and liver; 2. in actual inflammation of the intestines; 3. in extreme debility of the body; 4. in ruptures, prolapsus of the uterus, &c. 5. in violent pain from encysted biliary and other concretions; 6. in obstruction of the bowels or *infarctus*; 7. in persons of too rigid fibres, for instance, the very aged, in whom the fibres might easily break from too violent exertion; 8. in a very weak or injured state of the viscera, particularly the lungs, liver, and stomach; and, 9. in a preternatural structure of the body, or certain parts of it, wherein many individuals cannot take emetics without great danger; such as those who are troubled with a hump-back, a very short neck, or a narrow chest.

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*A comparative View of the principal Theories which have prevailed in Chemistry since the beginning of the present Century, By Dr. FRANK, Sen. of Vienna.*

THERE is no branch of useful and interesting knowledge, which, as to its *practical tendency*, has been so long and unaccountably neglected by the bulk of mankind, and which at the same time has experienced so many whimsical revolutions in doctrine, and misapplications in experiment, as that of chemistry.

Previous to the time of the learned BECCHER\*, this rational and truly philosophical

\* JOHN JOACHIM BECCHER, born in 1645, at Spires in Germany, was first Professor of medicine, and then first physician to the Elector of Mentz, and afterwards

philosophical science was much upon a level with astrology; the chemists of those ages were, in fact, little better than frantic alchemists, sordid adventurers after what they termed the philosopher's stone, or, in other words, downright enthusiasts, who expected to prolong their ill spent lives, and to accumulate immense wealth, by means of alchemical researches and productions.

Beccher surpassed both his cotemporaries and predecessors, in a very eminent degree: his observations were directed with great acuteness and accuracy to the nature and origin of the phenomena occurring in his chemical laboratory, and he was the first who, in this science, attempted to combine theory with practice. It cannot however be asserted of him with truth, that he was not affected with the epidemic mania of the times; on the contrary, the chimerical and childish pursuit of converting base metals into gold, was his principal study, occupation, and probably the predisposing inducement with him, to exert himself in his various physical researches, to penetrate more deeply into the nature of corporeal substances. Hence, even the useful part of his doctrine is so interspersed and obscured with alchemical conjectures, that it becomes a matter of difficulty to separate the dross from the ore; so much do his works abound with these excrescences of a fertile imagination!—At the time when this semi-philosopher shone as a luminary in chemistry, there arose a man whose luminous, comprehensive mind, contrasted with the puny ideas of contemporary writers, still claims our respectful notice and admiration. It will be readily apprehended, that we allude here to the celebrated STAHL\*; a man raised up to illustrate and establish genuine chemistry,

to the elector of Bavaria. He came to London, where he found an asylum from the malice of his invidious enemies, and died here in 1685. Besides various chemical and alchemical works, he published a book intitled, "*Character pro notitia linguarum universalis*:" i. e. A universal language, by the medium of which all nations might understand each other. It is the fanciful idea of a man of genius; although it is not improbable that he was indebted for the first hint on this curious subject, to the cotemporary work of Bishop WILKINS, published in 1668, folio: "*An Essay towards a real Character and a philosophical language*." Beccher was the first who applied chemistry in all its branches to philosophy, and showed what use might be made of it, in explaining the structure, the combinations, and the mutual relations of bodies. He pretended to have invented a sort of perpetual motion, as he was a very able machinist. The world is indebted to him for several useful discoveries, and he also attempted to make some improvement in the art of printing.

\* George Ernest Stahl, was born in Franconia, in 1660, and chosen Professor of medicine at Halle, when that celebrated university was founded in 1694. The excellency of his lectures, while he filled that chair; the importance of his various publications and his extensive practice, soon raised his reputation to a great height. He received an invitation to settle at Berlin, which he accepted, and was made counsellor of state and physician to the king. He died in 1734, in the 75th year of his useful life, and without doubt is one of the brightest luminaries, of which the annals of medicine can boast.

mistry, boldly attacking that horde of physical vermin, the alchemists, and incessantly darting the well directed shafts of satire and criticism, against the absurd prejudices and ignoble labours, which at that time disparaged the science of chemistry. He not only was instrumental in pulling down and demolishing a fabric erected with the most whimsical and grotesque materials, but he also possessed talents and ingenuity adequate to the rearing of a new system, compiled, in some measure, from the vestiges and fragments of former theories; a system incomparably more rational and just than those of his predecessors, and of considerable advantage to the subsequent progressive improvements which have taken place in that science. In a word, he projected a thorough reform in chemistry; retaining, however, what appeared useful, and superadding whatever he conceived to be necessary towards the establishment of his new doctrines. On these principles arose his famous *system of phlogiston*, which, however variously modified, has preserved its original character to the present day.

The following principles constitute the general outline of this system:

There is a principle subsisting in nature, which is the *sole and exclusive* cause of heat and fire. This principle, *phlogiston*, pervades all material bodies whatever, and indeed is a *constituent part* of the same, although it prevail in different proportions. Substances which possess a considerable quantity of it, are called *combustible* or *phlogistic* bodies. These *only* are capable of producing heat, light, and fire. *Phlogiston* appears to be a *subtile earth*, intimately combined with the *matter of fire*. By a *violent concussion of its parts*, the motion of fire is produced; and on this occasion the phlogiston is partly decomposed, and partly *volatilized*.—If both these phenomena take place, the *access of air* will be indispensably necessary; as, without it, the phlogiston would be *fixed in the fire*, and *not decomposed*;—of this, the rust of iron affords a proof, wherein the phlogiston exists, in the highest degree of accumulation. There is *no specific gravity* in this element, yet it is capable of rendering fixed bodies volatile. *Colours* are indebted to it for their existence. To metals it imparts lustre, cohesion, and solidity; all of which they lose when deprived of phlogiston, but recover by its access. It is therefore an *essential* constituent in all metallic bodies; yet the precious metals do not appear to contain it.\*

Such

\* STAHL'S Guide to Metallurgy, including an Introduction to the Knowledge of the Subterranean, Mineral, and Metallic Bodies, together with their original Mixture, (in German.) 8vo. Leipzig. 1720. Stahl's Reflections on the Dispute respecting the Nature of Sulphur. 8vo. Halle, 1718.

Such is the outline of the ingenious system created by Stahl. Considering the imperfect state of chemistry in that age, it was a master-piece of his profound genius, a phenomenon highly conducive to the progress of physical knowledge, and a glorious precursor to the actual improvement which this science has since attained. Stahl it was, who gave a stable point of gravitation to chemistry; till then tossed about, as it were, by the blind operations of superstitious fanatics and jugglers. He reduced the complicated train of phenomena to a regular series, established on scientific principles; he shed the light of day on the obscure laboratories of the alchemist, and dispersed the mists of their hyperphysical reveries, which were moreover expressed in the most unintelligible jargon. Henceforth chemistry assumed a new and more advantageous form, and has ever since justly claimed the appellation of a science, which until that period could not be granted to it with propriety. Many of the learned, who were not totally immersed in the speculations of alchemy, applied themselves with laudable zeal to the further elucidation and improvement of his new doctrine, and Stahl now enjoys the acknowledged honour of being considered as the founder of *scientific chemistry*.

It was to be expected, however, that the defects and imperfections of this system would be soon discovered, in an age of progressive cultivation of the sciences. Many phenomena could not be satisfactorily explained, others were entirely overlooked, by the author of the new theory of phlogiston. Of this nature are the absorption of respirable air during combustion and calcination; the increase of weight acquired by bodies during that operation; the escape of vital air in the reduction of mercury when performed in close vessels; the formation of carbonic acid or fixed air; the decomposition and reproduction of water; together with a number of other phenomena which, in Stahl's system, were couched in problems, the solution of which was deemed impossible.

Many zealous and acute chemists have endeavoured to supply these defects, and to render this system more deserving of that name; others have rejected it *in toto*, and directed their speculations purposely to frame another theory, which might more satisfactorily account for all the unexplained phenomena.

From this happy sectarianism in chemistry, two distinguished parties have taken their rise, that of the advocates for phlogiston, who appear obstinately determined not to relinquish their favourite hypothesis; and that of the antiphlogistic school, which has daily and rapidly increased in numbers, and in which the existence of phlogiston was, and is, boldly denied and ridiculed. With the well-known philosophic chemist of France, the

the immortal, though unfortunate LAVOISIER\*, at their head, the latter party has at length prevailed; yet not without a long and severe contest, which has terminated in an almost complete victory over the disciples of Stahl. The disputed point was canvassed with uncommon ardour by men of superior merit on both sides of the question, and the conflict was maintained for several years, with various and very unequal success. The ground-work of this structure, the *ci-devant* phlogiston, has been shifted and modified in a thousand different ways and forms. At one time it was not permitted to penetrate through vessels; at another time they allowed it a free passage to and from them. Some pronounced it *neutral* † with respect to its specific gravity; some maintained that this gravity was *negative* (a); with some it was a substance of an unknown basis (b); with others it was a combination of the elements of air and fire (c); or inflammable air itself (d); again, with others, it was considered as pure light (e); and lastly, it was said to consist of the matters of heat and light in a combined state (f). In short, it was a Proteus, who assumed every possible figure, and could adapt himself to any form whatever.

In consequence of these ill-according opinions, and to avoid the disgrace of appearing to favour doctrines so irreconcilable, a new system of chemistry was framed in Germany, which originated chiefly from the ideas of three celebrated Chemists, WIEGLEB, GREN, and WESTRUMB, and which was styled the *improved* phlogistic system. The following are its principal tenets: The matter of *light* and *heat*, in a *state of combination*, exhibit *phlogiston*. During the inflammation of combustible bodies, these matters are set at liberty or disengaged, either singly or in a combined state; hence arise light, heat, and fire. This disengagement, however, can only take place, when the phlogiston acquires activity by *communication* with the atmospheric air, or with that constituent part which renders it fit for the respiration of animals. This elastic matter, termed *pure* or *dephlogisticated air*, consists of *water* and *matter of heat*; it is of all substances

\* It is impossible to pronounce the name of this illustrious Frenchman, without feeling that degree of sympathy and indignation, which his untimely and shocking end must excite in the bosom of every friend of science, and persecuted innocence. LAVOISIER was among the victims of fanatical, and, as some will maintain it, aristocratical vengeance: he suffered under the guillotine in 1794, which was then totally at the command of that sanguinary monster, Robespierre, of infamous memory. We sincerely deplore the loss of Lavoisier; a man more to be regretted than any other that has fallen since the beginning of the struggle.

† This was the theory of Stahl, and his strict adherents.

- (a) Gren. (b) Scheele and Crawford. (c) Baumé. (d) La Metherie.  
(e) Maquer. (f) Wiegleb and Gren.



substances that which is the least saturated with phlogiston, and consequently it manifests a considerable power of attraction for phlogiston. But by this combination, it is deprived of its property of supporting the life of animals, and producing the combustion of bodies. It is changed into phlogisticated air, or that species of it, in combination with which it forms the atmosphere. In this state, however, it is reduced to an incomparably smaller volume and weight than it before possessed; because phlogiston being a body of a *negative specific gravity*, it possesses the power of rendering positively lighter all such substances as enter into combination with it.

From these assumed properties of phlogiston, it has been maintained by its advocates, that the increase of metals during calcination originates from the same cause, but that the metallic calxes suffer a diminution of weight in their regeneration; as, in the former case, they lose that substance which rendered them absolutely lighter than their own earthy base; and, in the latter, this base again recovers the principle of specific gravity, and they must therefore necessarily lose a part of their weight.

*Inflammable air* consists of *water* combined with *phlogiston*, and rendered elastic by matter of heat. It will always and necessarily arise, when water enters into contact with those bodies which it has power to deprive of their phlogiston. But in these cases the water, which is an *elementary substance*, is not decomposed, as it only enters into a new combination, and changes its form.—Water therefore must always be produced in the explosion of this air; because those substances become disengaged, which rendered the latter inflammable and gasiform, that is to say, an elastic fluid.

The *carbon*, or charcoal, is a compounded body which consists of *phlogiston* and *aërial acid*. The latter therefore is no new production, but rather an eduction.

*Sulphur* and *phosphorus* consist of their own *peculiar acids* and of *phlogiston*; by depriving them of the latter, the former become disengaged, and appear in a free or uncombined state.

Whatever advantages this modification of the phlogistic system seemed to possess, when compared with the doctrines of Stahl, it was found to be in many respects, unsatisfactory, and ill-qualified to resist the attacks incessantly urged by the opponents of phlogiston. The hypothesis respecting negative specific gravity, although ingeniously contrived, was particularly untenable, and its advocates were under the necessity of soon retracting it. The singular opinion of WESTRUMB, that the increase of weight, in bodies which have undergone the process of calcination, must  
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be ascribed to the *hygroscopic water*, was likewise easily confuted; so that the principal pillars of the system being shaken to their very foundation, the hypothetical notion of phlogiston was thenceforth considered as fairly overthrown.

Much better founded is the antiphlogistic theory, which is now very generally adopted, and of which MAYOW,\* an illustrious physician of this country, had sketched out the first idea, more than a century ago. But unnoticed by his cotemporaries, he either lived or died too early to consolidate and extend his opinion. Nay, insensible of his rare merit, as an original genius in the scientific department of physics, ungrateful posterity would perhaps have consigned his memory to oblivion, had not an acute modern chemist, his countryman, Dr. SCHERER, † of Jena, rescued his sublime opinions from his neglected writings, and thus erected a proud

\* No chemist or philosopher of former ages deserves more respectful mention than MAYOW. He published *five* remarkable Tracts which were printed at the Hague, in 1681, and dedicated to Henry Coventry, first secretary of state to Charles II. The first is on *salt-petre and its nitro-aereal spirit*, water-spouts, lightning, &c.; the second is on *respiration*; the third is on the *respiration of the fœtus in the womb and in the egg*; the fourth is on *muscular motion*; and the fifth, on the *rickets*. Whoever examines his fifth plate, will see, that inverted jars of air, and animals within them, were used in his experiments; and that he knew the use of the double convex lens, to set fire to substances confined in given quantities of air. Such a man, we think, should be called an *experimental philosopher*; and the more so, as some parts of his apparatus appear to be as well contrived as those of the present day.

Mayow published truths, for which the minds of his cotemporaries were not prepared. His luminous researches were given to the world about a century too soon. They were lost;—and the finding them, and making known their contents, constitute one of the many claims of Dr. Beddoes to public esteem.

*Medical Repository*, Vol. II. p. 194.

† This promising young chemist has acquired considerable and well-merited celebrity, partly by the ingenious chemical lectures he has, till lately, given in the University of Jena, where he was admitted public lecturer, in the twenty-second year of his age, and partly by several excellent publications in chemistry, chiefly adapted to the capacities of popular readers, or calculated to afford an elementary view of the antiphlogistic theory. In winter, 1797—8, he visited England and Scotland, where I had the good fortune of becoming personally acquainted with him. He travelled by appointment of the reigning Duke of Saxe-Weimar, a prince of the most accomplished literary talents, and a true Mecenas of neglected merit. Scherer now enjoys a handsome salary, in the capacity of Counsellor of mines to the Duke, and Superintendent of the mineral works established in the Duchy of Weimar. Having exerted himself for three or four years in the abovementioned University, to render his "*Experimental Course of Chemistry*" equally interesting and useful to the students of all professions; and having met with very indifferent encouragement (on account of his not being *professor appointed with a salary*; so that, according to his own words, in winter 1796 he had only *sixteen* pupils, at a fee of about two guineas each, for a course of Lectures

a proud trophy to a name which is now justly intitled to immortality in the annals of chemistry. But, before this apotheosis was bestowed on the manes of Mayow, Lavoisier, one of the most acute and inquisitive men that France ever gave birth to, had ingeniously applied the conjectures of our countryman; and this with very singular success. It is highly probable that the aphorisms of Mayow, (after he had confirmed and established them by the test of experience), inspired him with the idea, to construct a new system, which should effectually and for ever supersede that of phlogiston. Gifted with an accomplished, penetrating, and unprejudiced mind, Lavoisier appears, in most points, to have closely consulted, and as it were interrogated nature, in the formation of his admirable system. The foundation of it is established by facts founded on the most accurate experiments, and so systematically arranged, that the student of chemistry is equally captivated with the indications of his profound perspicacity, and with the excellent and elegant manner in which he connects and illustrates his propositions. We shall here endeavour to exhibit the most simple outlines of Lavoisier's "*New System of Chemistry*," and point out its excellence, by comparing it with others of a later date.

On account of the great variety of important articles which have come to hand, we are under the necessity of postponing the continuation of this interesting essay to our next, and probably several subsequent numbers.

continued through *six months, two hours every day!*) we rejoice in his release from so unprofitable and ill-rewarded an undertaking. These difficulties, however, have not been without their concomitant good effects; for, during this period, Scherer employed great part of his leisure in the more minute investigation of various unsettled chemical subjects, and in publication of three chemical works of uncommon merit, as elementary treatises. It was principally from these, he derived the greater part of his support, as he had been cruelly neglected by his wealthy relations, who originally educated him for the church. Thus, indeed, all his talents were called forth, and usefully exerted in the cause of a science, which is indebted to him for many sagacious hints and accurate illustrations—if not for original discoveries.

With respect to his merit in pointing out the extraordinary marks of original genius and talent, which were buried for a century in the writings of Mayow, we shall not attempt to decide whether he, or Dr. Beddoes, deserve the credit of having introduced Mayow to public notice and esteem.

For the literary engagements and pursuits of Dr. Scherer, we refer the reader to the notice given of his latest publications in our Journal, under the head *Medical and Physical Intelligence*.  
W.

*On the Utility of medicated Frictions in obstinate Disorders:—*  
*By Professor BRERA, of Pavia.*

IT is an admitted fact, that medicinal substances may be introduced into the human system through the pores, by means of the lymphatic or absorbent vessels; and that this mode of applying powerful medicines, without any co-operation on the part of the digestive organs, has been attended, in a variety of instances, with many and singular advantages. Is it not, therefore, matter of surprize, that this simple and beneficial process, with which it appears the ancients were familiarly acquainted, and which they continually practised in their medicated baths, should have become almost totally neglected by the moderns, if we except mercurial frictions in cases of lues?

Prof. BRERA, convinced by a number of experiments of the superior efficacy which the external application of different medical substances possesses over that of burthening the stomach with heterogeneous compounds, has lately published a third edition of his "*Programma del modo d'agire sul corpo umano per mezzo di frizioni fatte con salive, &c.*" \* in which he communicates some judicious observations derived from his own experience on this important subject, together with the result of the inquiries of other respectable physicians in Italy. According to the former of these, which he had frequent opportunities to repeat on different patients, afflicted with similar disorders, he acquaints us, that, for instance in the gout, he has successfully employed frictions with an ointment compounded of the *aconitum napellus* L. n. opium, and saliva; in dropical cases, he has recommended with equal benefit a mixture of the squil, or digitalis and saliva; to febrile patients, whose *primæ viæ* were obstructed, he directed the external application of the antimonium tartar, freely blended with saliva, or any animal fat, as hog's-lard, &c.; and thus (adds the Professor) the causes generating these diseases were sooner or later happily removed.

We shall just observe here, that our expectations are not very sanguine respecting the success likely to attend any *new* remedies or methods of cure, which a fertile invention may yet contrive: from deliberate conviction, we are of opinion, that the practice of medicine will be greatly more benefited and improved by an accurate diagnosis and nosological description of diseases (in both of which we come short perhaps of the ancients), than by the most promising discoveries in the *Materia Medica*, and the doctrine of therapeutics.—As it appears, however, that Prof.

Brera's

\* The learned Professor has also reprinted the *second* edition of this interesting practical essay in the "*Commentarii Medici*," of which he is the editor.

Brera's suggestions and experiments have been adopted and pretty extensively followed up by several gentlemen who rank high as Italian physicians, and of whom we shall only mention the names of BENVENUTI, LOCATELLI, and BOTELLI, who have directed similar medicated frictions in cases of gout and dropsy, as also in disorders accompanied with acute pain between the false ribs, convulsive coughs, &c. and that they have completely cured, or at least considerably relieved the situation of such patients; we are induced to recommend this method to the attentive investigation and trial of the medical practitioner in Britain.

The ingenious Professor concludes with the following observation, that medicated frictions will in all probability be found most successful in the treatment of diseases to which youth and infancy are subject, in cases of hydrophobia, &c.—for the corroboration of which, however, we do not find that he refers to any practical instances.

*On the practical Study of Botany, by means of Chemical Analysis:—Chiefly abridged from the original Papers of Dr. S. F. HERBSTAEDT, Professor of Chemistry and Pharmacy, at Berlin.*

WHEN we contemplate the wonderful relation between causes and effects, every where subsisting in the works of Nature; when we compare the infinitely diversified structure of organized bodies with that of inanimate matter, our astonishment increases in proportion to the extent of our researches, and we are involuntarily led to discover a certain order and regularity, in space and time, prevailing throughout the whole system.

The most superficial observer is forcibly struck with the admirable succession of plants, uniformly corresponding in their appearance, rise, growth, &c. with the different seasons; and although this spontaneous periodical effort of nature appears to be exclusively devoted to vegetable substances, it may sometimes be traced, in a faint degree, even to the boundaries of the animal kingdom. Indeed, the line of demarcation between animal and vegetable life is but slightly marked, so that it remains to this day a matter of doubt, whether some of the marine plants, as well as the moving plant (*Hedysarum motitans*, LINN.), and several species of *Tremella*, are not to be considered as subjects of the animal, rather than of the vegetable kingdom.

Although the animal world be likewise governed by fixed laws, relative to the size and form of bodies, yet it may be asserted that nature here  
has

has resigned part of her authority to the will and inclinations of the creature:—neither the successive periods of propagation, nor the limits of duration, are discriminated with the same accuracy as is perceptible, in every season, in the vegetable world.

The *mineral* kingdom, with all the riches, beauties, and sportive productions it contains, is the least perfect of the three; as the principal circumstance which characterizes this part of nature's wonders, consists in the peculiar structure and exact form of crystallizations, the size of which is as indefinite as their origin is accidental, so that the formation of crystals apparently depends more upon *chance*, or a sort of whimsical combination of circumstances, than upon the premeditated designs of nature.

It is well-known to every chemist, what an endless variety of crystallizations may be produced artificially, by combining different salts and acids with each other, and causing them again to crystallize. We can, in some degree, imitate this process in vegetable substances, and thus likewise artificially multiply the variety of plants and trees; but the genera and species are not subject to laws, either arbitrary or accidental, as they must necessarily remain in the state appointed them by nature, unless disposed otherwise by the hands of men.

From these desultory reflexions we may rationally infer, that the investigation of plants and trees, with a view to obtain a more perfect knowledge of their regular organic structure, justly deserves the attention of every inquisitive mind. Curiosity alone is, with some persons, a sufficient inducement to apply themselves to the study of botany, the most charming part of Natural History. ROUSSEAU expresses himself, on this subject, with his usual happy discernment, in the following words: "I am persuaded," says he, "that at all times the study of nature checks the ardour for frivolous amusements, prevents or assuages the tumult of the passions, and provides the mind with a most salutary nourishment, by filling it with an object worthy of its contemplation."

But the principal advantages to be derived from a *proper* study of this delightful science, are not merely those of affording pleasure and innocent occupation to the mind, as eloquently urged by the philosopher of Geneva; they are of a still more extensive and *practical* nature, and claim the attention of all classes, and even of every member of the community.

It certainly must afford us a degree of rational entertainment, when we are enabled to distinguish the variegated productions of vegetable nature, as to their form, structure, size, native soil, and other circumstances connected with the periods of their birth and dissolution. Thus we learn to arrange them into classes, orders, genera, and species; to point out, in the  
system,

system, the exact place of every new plant which may yet be discovered, and hereby save ourselves much trouble and confusion. This however may be termed merely scholastic, or a mechanical kind of knowledge, so long as we remain ignorant of the various constituent parts of the plants themselves, and the many important uses and purposes to which they may be daily applied in rural, domestic, and medical economy, as well as in some of the most valuable departments of the arts and manufactures.

The late discoveries in chemistry have sufficiently shewn, that the component parts of vegetable bodies are of a very compound nature, and that consequently their *chemical analysis* requires a greater degree of accuracy and perseverance, than has hitherto been bestowed on this important branch of physics. We shall find upon a closer inquiry into the nature of vegetable productions, that we must recognise or admit such a number of *distinct elementary principles* as we can discover and exhibit to the senses by well-conducted experiments. For, if certain parts which enter into the composition of plants, can be separated from them in a great variety of instances; if they are manifest to the observer, not only as distinct substances, but also as chemically related to other bodies—we have in that case, doubtless, a right to consider them as distinct elementary parts. Such a distinction of the various useful ingredients with which nature has richly provided her vegetable children, is of essential consequence; as it will lead us in many cases to determine with accuracy their respective use and value. But, as their utility is not confined to *medicinal purposes only*, it will be necessary to take a more comprehensive view of the subject under consideration, and to arrange our materials more systematically than our predecessors were inclined or able to do, from their acknowledged deficiency in chemical knowledge.

The bare arrangement of vegetable productions, together with the most perfect acquaintance with the names and *botanical* characters of plants, is an acquisition of only relative value, considering the study of botany in a *practical* sense; that is, so far as it is more immediately connected with the useful purposes of life. In this respect, an immense treasure at once opens to our view. And it may be confidently asserted, that botany is of greater practical utility than any other science; for, if the knowledge of vegetable substances be established upon a *chemical basis*, it may be rendered subservient to the most important purposes; a truth which will be amply demonstrated by the following reasons and illustrations.—No sacrifice of time and labour will be found adequate to the important advantages, which may be derived from an accurate analysis of plants, and their extensive application to health, economy,

oeconomy, and the arts of dying and painting, weaving, brewing, distilling, tanning, soap-making, &c. &c.: indeed, these advantages are not limited to any particular class or rank of society; they are as manifold and beneficial, as the productions of the vegetable kingdom are in themselves wonderful and innumerable. The infinite variety of experiments that can be instituted with vegetable substances, as they are highly gratifying to the laudable curiosity of minds of an inquisitive and scientific turn, so are they equally interesting, for profitable purposes, to the husbandman, the artist, and the manufacturer; while the young and the gay also find their account in them, as they tend in a great measure to controul the rage for dissipation, and gradually to habituate the admirers of nature to more serious and useful pursuits. To prove and establish what is here advanced, we propose to exhibit the various *primary* and *secondary* constituents of vegetable bodies, together with the *acids* which may be obtained from them, in *three* separate *tables*. And after having indicated these particulars, we shall endeavour to furnish the reader with a *complete* list of chemical tests, or re-agents, by means of which the presence or absence of certain ingredients or properties, inherent in the various parts or productions of plants and trees, may be most effectually discovered, and their proportionate quantity ascertained with precision.

#### TABLE FIRST.

*Primary Elements of Vegetables which can be separately exhibited as Objects of Sense, without undergoing any Change of their native or inherent Qualities.*

1. THE substance of *Gum*, (as being different from mucilage and resin,) for instance, the pure *Gum Senegal*, which is obtained from the *Mimosa Catechu*, Linn. and which by the old chemists was improperly called *Terra Japonica*.—The pure substance of this gum agrees with that of every plant, if obtained in a pure state; it is perfectly soluble in water; the inspissated solution of it may be drawn in threads, and it is, upon the whole, extremely glutinous.

2. *Mucilage*. Nature furnishes this substance, in a pure state, in the *Astragalus Tragacanthus*, Linn. (or more properly the *Astragalus Creticus*,) which is to this day erroneously called *Gum Tragacanth*, although it affords by no means a perfectly transparent solution in the purest water; on the contrary, it remains always opaque, does not feel glutinous but slippery between the fingers, and cannot be drawn in threads. The farinaceous or mealy part of vegetables, in its *pure* state, is likewise a mucilaginous substance; it should be observed, however, that true meal always implies and contains starch, *Amylum*, which forms the principal part of the farina.

3. True



3. *True Resin*, the characteristic of which is, that it makes a perfect solution in spirit of wine, or vitriolic ether. The *pure* substance of resin is of an homogeneous nature in all instances, so that the foreign ingredients occasionally found in different resins, constitute all the difference observable in them.

4. *Soap*, or saponaceous matter, a neutral substance between gum and resin.—This name should be exclusively appropriated to a certain principle in plants, which is soluble in the purest water, as well as in the most rectified spirit of wine, but is not acted upon by vitriolic ether. Thus, the constituent parts extracted from saffron almost entirely consist of saponaceous matter, which is a very copious ingredient in the composition of vegetable bodies; but, on account of its easy solubility, both in water and spirits, it has hitherto been as often confounded with resins as with gums. It is one of the most general constituents of vegetables, and hence promises considerable advantages to the manufacturer of this article, as it is no less subservient to the purposes of domestic economy.

5. *Sugar*, or the saccharine principle. It exists in all vegetable substances of a sweet taste, but is so intimately blended with gummy, mucilaginous and saponaceous matters, that it cannot be separated from them without some difficulty.

6. *Albumen*, first so named by Fourcroy, on account of its exact resemblance to the white of eggs. It is found principally in cresses, scurvy-grass, hemlock, and most abundantly in the antiscorbutic and narcotic plants, where it generally resides in the leaves. Its presence may be easily discovered, by mixing the freshly-expressed juice of these plants with spirit of wine, or by macerating them in hot water, nearly to the boiling point: in both these cases the albumen will coagulate and separate itself from the other fluids in the form of cheesy matter.

7. *Oil*, or the basis of every ethereal and distilled oil. It differs from the following substance (No. 8.) merely in the proportion of its constituent parts. According to the opinion of Hermbstaedt, the basis of vegetable oil is carbon and hydrogen only; whereas that of fat consists of carbon, hydrogen, and oxygen. Vegetable fat may be converted into oil by means of dry distillation; but, whether the basis of oil does not also contain the *odoriferous* principle in vegetables, or whether this be combined with some other element (such as that of *Boerhaave's Spiritus rectior*) is a point not yet determined, and remains to be illustrated by future experiments.

8. *Fat* is the basis of every vegetable oil. The difference between oils and fats, in general, consists merely in the foreign ingredients with which the

the matter of fat is combined. The oil of almonds, and the butter of cocoa, in the opinion of our author, are both of them substances purely fatty, and they differ only as to the degrees of consistency.

9. *Camphor* has hitherto been considered as a peculiar substance, different from all other vegetable matter, though in its properties it mostly resembles the oleaginous bodies. Some vegetables contain, besides the matter of oil, a considerable portion of camphor in their constituent parts; the presence of which may be frequently discovered by an odour and pungent taste, accompanied with a sensation of coolness on the tongue; this is found in the peppermint, sage, cardamom, and other substances.

10. *Wax* appears to be different from the matter of fat, in the same degree as oil is from that of camphor. The presence of wax is discoverable in a much greater number of vegetables than has hitherto been supposed; it may be obtained from the leaves of most plants and trees, as is manifest from their shining cover or varnish, which generally consists of waxy matter. It is also met with as a constituent part of several sorts of resins, and may be separated from gummy, mucilaginous, and saccharine matters, by means of mere water; from saponaceous substances, by water or spirit of wine; and from resinous bodies, by means of vitriolic ether.

11. *Elastic Gum*. Although this name is by no means the most eligible, it must remain here until we can substitute a better. This valuable substance, which undoubtedly forms a constituent part of many vegetables, appears to be most intimately combined with the matters of resin, albumen, and fat; hence it is extremely difficult to disengage it from them by art. Its proper solvent is a pure vitriolic ether; but a still better one has been discovered lately, which is rectified *petroleum*, or rock oil; in this it is perfectly soluble, and may again be separated from it, by simple distillation with water. In the analysis of vegetable bodies, the elastic gum has till lately been almost entirely overlooked.

(To be continued in our next Number.)

# MEDICAL AND PHYSICAL INTELLIGENCE,

(Original and Selected.)

THE *yellow fever*, whose ravages within a few years past have been so often deplored, has lately renewed its baneful visitation in the United States, to a greater extent than hitherto remembered, and with multiplied horrors. The northern, southern, and western parts of the Union have for the most part been so fortunate as to escape this calamity. The commercial towns situated to the eastward of the bay of Chesapeak, and the river Susquehanna, have been the principal scene of suffering. Portsmouth, in New Hampshire, Boston, New London in Connecticut, New York, Philadelphia, and Wilmington, in the state of Delaware, besides some other places of inferior consideration, have largely smarted under this epidemic scourge. Portsmouth and Petersburg in Virginia, were the only places west and south of the Chesapeak and Susquehanna, so far as we yet know, where the fever raged with violence. In all these towns the sickness and mortality have been considerable; and, in addition to these, the consternation and flight of the inhabitants, and the derangement and suspension of business, with all the concomitant evils and inconveniences, have greatly contributed to increase the public distress.

Although the month of June and July, with the exception of a few days, had been moderate, cool, and rainy, the weather totally changed in August, when it exhibited such a degree of heat, in point of duration and steadiness, if not of severity, as is very seldom witnessed in that climate. Throughout a great part of September, the heat continued with little sign of abatement; even much of October was unseasonably warm; and the frost did not properly set in till a later period of the season than usual.

This epidemic generally appeared early in August; through the remainder of which month, as well as September, and great part of October, it continued to rage with undiminished violence: it was not until the latter end of October, although in some instances earlier, that a sensible abatement in the number of its victims had taken place; and in the first weeks of November, the disorder entirely ceased. During this short interval, thousands of useful citizens were prematurely cut off, among whom we have to deplore the loss of not less than sixteen physicians, and particularly that of the learned and universally respected Dr. E. H. Smith, of New York.

It is with great satisfaction that we can at length announce the discovery of a *more successful method of treating the Yellow Fever*, in America, than any which has been hitherto attempted. We learn from the report of Mess. Isaac Rand and John Warren, relative to the anatomical dissection of bodies dead of the late malignant Epidemic at Boston, which report is signed September 8th, 1798, that, after proper evacuations, the use of calomel has been found generally sufficient to answer the above important purpose. This  
medicine

medicine has been accordingly administered to fifteen patients; within eighteen days; all of whom, excepting one, have either recovered, or have past the dangerous crisis of the disorder. It has been given, not in the usual doses, for the purpose of an evacuant by the intestines, but in small doses of one, two, or three grains every hour or two, so as to produce a salivation as soon as possible; with this view from 100 to 230 grains of calomel have been taken by the patient, in the course of three or four days, commencing the use of it immediately after the first copious evacuations by bleeding and purging; and, in every instance, as the salivation came on, the disease has been observed to abate.

As coinciding in sentiment respecting the use of mercury, so as to produce a salivation, (in the treatment of the yellow fever) we with pleasure mention the learned Dr. Rush of Philadelphia. But this method is still more explicitly pointed out, and more highly recommended by James Clark, M. D. F. R. S. E. in a treatise on the yellow fever, on the appearance of that contagious malady, in the island of Dominica, in the year 1790, 94, 95, and 96.

The Doctor recommends the free use of mercury, both as a remedy and a preventive—His words are, “The officers of the army and navy, who have leisure and can be prevailed upon, on their arrival in the West Indies, to undergo one or two courses of mercury, take a few laxative medicines, after confining themselves to a moderate use of wine, and living chiefly on vegetables and fruits for the first two months after their arrival, may rely, almost to a certainty, on escaping the fever.

In a *Meteorological Journal*, accompanied with remarks on the diseases of the season and their treatment, published by that accurate observer, Dr. Shadrick Ricketson, of Dutchess County, we find the following, among other curious and interesting observations, on the three spring-months, towards the close. “It may not be wholly foreign or improper to remark, that *horses* were very generally and severely afflicted this spring (1797) with the common distemper in the glands of the head and throat; for it has frequently been observed that horses and dogs have been affected as concomitant, or prefiging, epidemic or pestilential diseases; but, whether the present or a future sickness is to follow, I leave for future observation to determine.”—In concluding his remarks on the weather and diseases of the last summer, the Doctor says: “In my last I mentioned that horses were severely afflicted with their common disorder, which has continued to be the case, but not so generally; and I may now add that *dogs* have been in like manner violently disordered with a cough, &c. during the greatest part of the summer.”

Mr. Webster's *History of Pestilential Diseases*, particularly with a view to ascertain and describe those of America, is now in the press at New York.—The design of this publication is, to collect the principal facts which regard the origin, progress, and declension of pestilential epidemics, in general; together with the remarkable phenomena of the natural world, such as unusual seasons, contagious diseases among animals, uncommon appearance of insects, and other preceding or concomitant events which may probably have some connexion with the latent causes of pestilence; in order to obtain, if possible, some well-grounded knowledge of the sources from which proceed the wide-wasting diseases which afflict mankind. A great number of curious facts are combined, and it is believed they will throw much light on this melancholy subject, of such important concern to the commerce of our cities, and to the lives and happiness of mankind.

We observe, with no small satisfaction, the re-publication, in Philadelphia and Boston, of the *Essays* of the philanthropic American, Count RUMFORD; a work which merits a place in the libraries, and even in the hands of all who sincerely wish to promote the prosperity of their country, and the happiness and prosperity of their fellow-mortals.

A second volume of Dr. TROTTER's *Medicina Nautica* is now in the press, and will be published early in March. This volume, we understand, contains an extensive correspondence with naval surgeons in different parts of the world. The discussion of the extirpation of contagion is resumed, and much fresh evidence is adduced of the inefficacy of the nitrous gas, and all species of fumigation in this process. A summary of Professor MITCHELL's doctrine on *Pestilential Fluids* is given in an Appendix, selected from American Papers, transmitted to the Board of Admiralty by his Majesty's Consul General.

This doctrine directly opposes that of Dr. J. C. Smyth, and agrees in a great part with the practice of the naval physician, whose success in the ships of the fleet, it must be confessed, has been such as to make infection no longer formidable.

Mr. G. CORNELLI, of Cologne, some time ago published a treatise (in German,) *On the Disadvantages attending the common Process of distilling Vinegar, &c.* in which, among other subjects, he endeavours to prove, that vinegar, when suddenly evaporated on hot bricks, or iron, for the purpose of fumigating sick and bed-rooms, instead of purifying the corrupted air in such places, has rather a contrary tendency. Hence, by the usual method of evaporating vinegar, the air becomes tainted with a great proportion of carbonic acid gas, one of the most irrespirable species of air. The author, therefore, advises to place the vinegar, in some shallow vessel, upon a moderately warm part of an oven or stove; but, as these are rarely used in Britain, the purpose may be fully answered, by placing a tin vessel containing vinegar over a faint lamp, at such a distance as to keep the vinegar near the boiling point, and thus communicating an equal degree of heat to the vessel fixed above the lamp.

Since the death of the celebrated Desfault, in 1795, M. PELLETAN has been, and still is, the principal surgeon at the *ci devant* *Hôtel Dieu*, now called *Hospice de l'Humanité*, at Paris. This stupendous asylum for afflicted persons of every description, contained, previous to the Revolution, a sufficient number of beds to accommodate at least 2000 patients. And although this number is considerably less at present (a remark which equally applies to the population of Paris and the country of France at large); yet this reduction, with respect to the hospitals, is attended with one most important advantage, that there is no necessity, at present, to crowd several individuals into one bed, or as a late traveller sarcastically expressed it, "to pickle them together like herrings in a cask."

The second surgeon is GIRAUD, a worthy pupil of the late Desfault; in the six winter-months he delivers a regular course of lectures on anatomy and surgery, while Pelletan only makes occasional discourses and remarks on the clinical patients under his care. Giraud is an excellent and successful operator, and is aided by a number of pupils, who partly reside altogether in the hospital, and partly repair thither to visit the patients, and to assist at the daily operations. The latter are called *Externes*, and the former,

former, *Internes*, who keep a regular journal of the patients, as well as of the remedies prescribed, and are styled *Chirurgiens de Garde*, having each of them a separate hall or ward of patients intrusted to their provisional care. Prior to the new order of things, the nuns waited on the patients in the character of nurses, and had, upon the whole, an almost unlimited sway in the house; latterly, however, their influence has declined, or is in a manner lost, and they are now reduced to their original condition of waiters on patients, and are obliged to conform to the ordinary apparel of females. It should be observed, however, that the superintendence of the midwifery-ward in the house appertains to them exclusively; and they execute their trust in so strict a manner, that no male visitors whatever are admitted there, not even the *chirurgien en chef*, unless his assistance be essentially and expressly wanted, and called in by the nuns.

Notwithstanding the numberless chirurgical operations occurring here every day in the year, it is believed that the pupils or visitors derive no very great benefit from their attendance. The beds of the patients are placed too close together; there is no particular room appropriated to the operations, which, strange to tell, are performed on the very beds of the sufferers; the number of pupils and attendants present, together with the prodigious bustle, throng and noise—all these circumstances conspire to lessen the benefit which a visitant, particularly a foreigner, might otherwise receive in attending the Grand Hotel Dieu.

Another clinical establishment in Paris, of less magnitude, but much greater practical utility to the student, and infinitely better adapted to the purposes of cleanliness, as well as the performance of chirurgical operations, is that which formerly was known by the name of *la Charité*, but now by that of *Hospice de l'Unité*. The wards of this hospital are not so crowded with patients; the beds stand at a convenient distance from each other, and the number of students is not so great as in the *Hospice de l'Humanité*. Generally, about one hundred chirurgical patients are admitted here. The principal surgeon of this hospital is *Deschamps*, who being advanced in years, allows *M. Boyer*, who is likewise appointed one of the principal surgeons to the house, and an eminent pupil of *Desault*, to perform most of the operations. *Deschamps* had formerly much and successful practice in lithotomy. He has lately published a large treatise on this subject, and has also acquired considerable reputation by a newly-invented instrument, which is now employed with great advantage in the operation for the popliteal aneurism.—*Boyer* is universally allowed to be the most ingenious of *Desault*'s pupils; he is not only an excellent operator, but he is ever apt and ready to instruct others, who address themselves to him with confidence, without displaying his great superiority, or dispatching the questions of his pupils with categorical and evasive answers. His anatomical and chirurgical lectures, as well as his work lately published on these subjects, are intitled to much praise for correctness of language and perspicuity of demonstration.—Although he was, for several months, provisionally appointed first surgeon to the Hotel Dieu, after the mysterious death of *Desault*, yet, notwithstanding his great merit, he could not obtain this situation as a permanent office: *Dii non sic voluerunt*.

It is a singular fact, that even in France, where surgery has been so superiorly cultivated for centuries past, we meet with surgeons who are in a manner strangers to the treatment of internal disorders, or who at least do not interfere in the management of any other but what are strictly called surgical patients. If, therefore, it should happen that a violent fever supervene

vene in any surgical case, or after an operation performed by a surgeon, a physician is necessarily called in, who frequently prescribes medicines according to the present febrile symptoms, without paying due regard to the external condition of the patient.—Such distinctions however, between two inseparable branches of the same profession, can never be productive of salutary consequences, but rather must have an obvious tendency to check the practical progress of both.

The "*Annales de Chimie*" of the 30th Frimaire, (December 20, 1798) contain an interesting Memoir read by FOURCROY in the medical school at Paris, "*On the application of pneumatic chemistry to the practice of medicine, and on the medical properties of oxygenated substances.*"

Our limits will not permit us, in this Number, to give an abstract of this elaborate essay, and to do it that justice which its merits, and the celebrity of its author demand. We shall therefore confine ourselves to extract what C. Fourcroy calls his "*profession de foi.*"

After an appropriate introduction, alluding to the practical advantages resulting from new chemical discoveries, and the good effects to be expected from them in medicine, he thus proceeds: "But if I confidently announce the hope of a happy and approaching revolution in the art of healing, I ought, while I appear to encourage such a change, to resist the dangerous consequences of that petulant activity, which inflames instead of enlightening the mind; of that premature love of innovation, which is eager to destroy without being able to raise any structure on the scattered ruins; I fear, I confess, as much from these imprudent innovators, as I apprehend from the zeal of the adherents to old systems. If the latter set their faces against the progress of reason, the former are anxious to precipitate themselves into errors, by exaggerations not less dangerous. I am equally an enemy to the innovating folly of the one, and to the dull inactivity of the other. I reject the pretended sufficiency of the Brunonian doctrine for every medical theory, as well as the indiscreet attempt of explaining every where the mechanism of animal life, by a chemical action. I undoubtedly am desirous of a revolution in the theory of medicine; it is the object of my prayers; I have foretold it these fifteen years in my lectures; I have every where proclaimed it in my works; I shall forward its progress with all my power and abilities:—but I wish for a revolution, wise, moderate, and reflecting. I do not burn the old books, with Paracelsus; I do not break the pneumatic vases; I do not at once proscribe every species of medical knowledge; I preserve all that exists, and do not sacrifice this knowledge to any new applications, or to a doctrine hitherto built upon sand. It would be injudicious to abandon what we have industriously acquired; to extinguish at once the light kindled by long experience; and to exchange it for that *theoretical empiricism*, which directs the medical practitioner to embrace a phantom.

Dr. SCHERER, whose merits in chemical science have already been noticed, p. 69. of this Journal, has lately commenced a periodical work which, by his extensive correspondence with the most celebrated European chemists, appears to possess considerable advantages over all publications of a similar nature. This work is intitled the *Universal Chemical Journal*, and is published in numbers, every month, by Breitkopf and Hartel at Leipzig;—it promises to become one of the most valuable vehicles of physical and chemical knowledge on the continent.—Dr. Scherer has also announced another publication he is preparing for the press, intitled "*Inquiries into the nature and application of every species of manure hitherto known; instituted by the members of the Board of Agriculture in London.*"

It is with great satisfaction we can announce to our readers that the fourth and last volume of the "*History of Medicine*," (a valuable work begun about seven years ago!) by the accurate and very learned Prof. KURT SPRENGEL, of Halle, will make its appearance in the month of May next; we may also indulge the hope of seeing speedily a correct translation of it by Dr. ANDREW DUNCAN, Jun. of Edinburgh.—To afford the reader some idea of this very respectable work, alike interesting to the philosopher and the physician, we shall only observe, that in order to write an history of medicine with advantage, it was necessary to collect and bring under distinct points of view, the facts and arguments scattered in a thousand works; to read the writers of different ages and nations, *in the original*; to enter into the spirit of the times when they were composed, and to investigate the history of society and the sciences, in all the branches connected with medicine. This great and laborious undertaking Prof. Sprengel has been able to accomplish; nor has he ever tamely copied from his predecessors, but with indefatigable zeal drawn his knowledge from the original sources.

Two eminent physicians, Prof. JUNCKER, of Halle, and Dr. FAUST, of Buckeburg in Germany, are now (and have been for several years past) actively employed in circulating and preparing for its execution no less important a scheme than that of subduing, and, if possible, extirpating the natural *small-pox*, as a contagious disease, throughout Europe; in a manner similar to that, by which the progress of the plague and leprosy had been successfully checked, for several centuries past.\* Many respectable physicians, both in Germany and Italy, are zealously co-operating in this humane and meritorious design, particularly Dr. HUFFLAND, of Jena, and Prof. SPRENGEL, of Halle.

We are authorized to state, that the Congress assembled at Rastadt, have taken this subject into serious consideration, although it is in a manner unconnected with the important objects of their mission.

Dr. Faust has lately addressed a printed circular letter to the different public agents convened there; and, much about the same time, another memoir to the same effect was transmitted to Rastadt by Prof. Juncker, although without his previous knowledge of Dr. Faust's spirited address, which was introduced by a gentleman residing there in a diplomatic capacity, and is printed in the German and French languages.

It is fervently to be wished, that the plenipotentiaries may prevail upon the potentates they represent, whether monarchical or republican, to declare war against this formidable enemy to the human race, the small-pox, which, it is confidently asserted by Dr. Faust, destroys, in Germany alone, *seventy thousand persons annually, or nearly 200 per day!*

Dr. JOHN ARCHER, of Harford county, Maryland, in America, has found by a number of decisive experiments recently instituted, that the seneka-root (*Polygala Senega*, Lin.) is an almost infallible remedy in Croup, or the *Cynanche Trachealis* of Cullen. From a letter lately written by Dr. Archer, and addressed to Dr. Barton, of Pennsylvania College, we shall communicate to our readers the following important particulars:

"I have (says Dr. Archer) in a great many instances found a decoction of the *Seneka* the most powerful medicine in the cure of this disease, and I am happy to tell you that I believe it may be depended on. I make a strong decoction of the root in the following manner, viz. half an ounce of the *seneka*, in coarse powder, is boiled in eight ounces of water down to four. Of this I give a tea-spoonful every half hour, or hour,

as

\* The plan itself shall be given in a future number,



as the urgency of the symptoms may require, and at intervals a few drops, to keep up the stimulus, until it either acts as an emetic or cathartic. I then repeat it, in smaller quantities, so as to preserve the stimulus of the seneka constantly in the mouth and throat.

"If the disease be more advanced, and the breathing more difficult, with a peculiar harsh or shrill sound, like air forcibly drawn through a small aperture, attended with a retraction of the upper part of the abdomen under the cartilages of the ribs: I then give calomel freely and frequently, and rub mercurial ointment on the throat and contiguous parts, so as to affect the glands of the throat and mouth, as quickly as possible. This I do that the mercury may co-operate with the action or stimulus of the seneka, and thereby hasten the separation of the membranous substance formed in the trachea.

"In this method I have succeeded in the cure of the croup, even beyond my most sanguine expectations."

Dr. STRUVE, of Gorlitz (who was lately presented by the Royal Humane Society of London with all their works, for his excellent treatises on re-animation, and other subjects connected with the philanthropic views of the society) has discovered a remedy for the *hooping-cough*, which is intitled to the serious attention of practitioners.—After having directed a gentle emetic to be taken by the patient, Dr. Struve prescribed the following mixture to be rubbed in, every two hours, in small quantities, about the region of the stomach. One scruple of emetic tartar is dissolved in two ounces of water, to which solution is added one ounce of the strong tincture of cantharides.\*—In a great variety of instances, the doctor observed, that a gentle perspiration came on during the night, after the use of this application; that the violence of the cough immediately abated, and in a short time the symptoms totally disappeared. He does not consider the emetics alone adequate to produce these beneficial effects; but, in combination with the mixture for external application, the disease seems no longer so formidable as it has hitherto been. We cannot, however, forbear to caution the young practitioner in the use of this and similar heroic remedies, particularly if resorted to, from urgent necessity, in infantile and female disorders.

Prof. LE ROY, of the school of medicine at Paris, has lately published an account of a new method of curing erysipelatous inflammations, and cutaneous eruptions, by the external application of *hot flour*; detailing several cases in which that remedy has been successfully used. For want of room in the present number, we propose to give a more particular account of this interesting discovery in our next.

According to an account given by Dr. DE WITT, physician in the city of Albany, the effects of the *datura stramonium*, thorn-apple, appear to be so extraordinary that they well deserve the further notice and investigation of practitioners. The seeds of this plant, when eaten or swallowed inadvertently, have been found to produce, 1. unusual pain and anxiety; 2. convulsive motions; 3. apparent dread or aversion to water or fluids of any kind; 4. vesications on the skin, after the violent symptoms had subsided; and 5. large and involuntary discharges of urine. Thus, the extremely active and stimulating power of this plant, and its violent operation on the human body, would seem almost to equal the combined force of plague, small-pox, hydrophobia, and epileptic convulsions.

From

\* We have no doubt that this composition is, in substance, the same with ROCHER'S Royal Embrocation for the hooping cough.

From a letter of Citizen S. lately published in the "*Annales de Chimie*," it appears that no less than twenty-seven of his poultry, including a turkey-hen, all died in the course of a few days, in the most dreadful convulsions. Curiosity induced him to open them, when every thing appeared in a sound state, without any indications of the slightest malady; he perceived, however, that the internal membrane of the gizzard was somewhat tough and shrivelled, like most animal substances, when exposed to the action of heat. In all the different subjects the stomachs were luminous; the grains, not fully digested, glittered in falling down to the ground; and those which at first presented no light, almost instantly exhibited both light and the smell of phosphorus, when heated. This convinced Citizen S. that there could be only one cause for all these effects, and that they were all produced by the circumstance of his having four or five days before, thrown out some water through a casement into the Poultry-yard; which water had served to wash and purify several substances, on which operations of phosphorus had been performed. The phosphorus contained in these waters, in a state of nature, he considered as solely occasioning the death of such a number of domestic animals.

The *Chemical Society of Philadelphia* have appointed a committee to collect into *one synoptical view*, all the different processes carried on in different countries, for the purpose of manufacturing nitre. They invite all persons who may possess information respecting the mode of producing this valuable *neutral salt*, to forward it to their secretary (*post paid*). They also request their fellow-countrymen to furnish them with accurate descriptions of the *situation, soil, temperature, &c. &c.* of those places in which nitre is found in a *native state*.

The liquid obtained from distilled animal substances, and which has hitherto been supposed to contain only carbonate of ammonia, and an oil, has been found by recent experiments made by Citizen BERTHOLLET, to contain also an acid, to which he has given the name of *zoonic acid*. This acid, which he has discovered in the liquid produced from the gluten of meal, from the yeast of beer, from bones and rags distilled for the preparation of the muriate of ammonia, he thinks himself authorized to consider as a product of the distillation of all animal substances. To obtain the *zoonic acid* pure, he employs the following process: he mixes water of the *zoonate* of lime, well assimilated in a tubulated retort with phosphoric acid, and then proceeds to distillation. The *zoonic acid* is somewhat volatilized; it requires a degree of heat nearly equal to that of boiling water to arrive at distillation; it will then be necessary to boil the liquor; if two receivers be used together, none will pass into the second. It appears that a part of the acid is destroyed by the action of heat; for the liquid upon boiling becomes brown, and at the close of the operation grows black. Hence Citizen Berthollet infers, that this acid contains carbone. He has not yet ascertained the other principles which become disengaged in the decomposition. The *zoonic acid* has a smell, not unlike that of meat when roasted brown; and in effect, it is produced on that occasion. Its taste is pungent (austere). It gives a strong red to paper dyed with the turnsole, and effervesces with all alkaline carbonates, &c.

Citizen BRUGNATELLI, author and editor of the "*Italian Annals of Chemistry*," has lately declared his concurrence with the opinion expressed by Citizens FOURCROY and VAUQUELIN, relative to the experiments of Goettling, in Germany, on the pretended combustion of phosphorus in azotic

azotic gas. Brugnatelli here expresses his assent to the evidence afforded by the experiments of the French chemists, and he accordingly retracts the denomination of *fossigene gas* (engendering light) which formerly he thought himself intitled to give to azotic gas, on the facts announced by the chemist of Jena;—the denomination of *thermoxigene gas* (engendering heat and acids) must consequently fall, at the same time, with that of *fossigene*.

Mr. COLLIER's Patent "for a chemical process for freeing fish-oils from their impurities in smell, taste, and colour; and for improved strainers for oil, water, and other liquids, with instruments for ascertaining their qualities, and assisting their burning," is of such extensive practical importance to health, domestic economy, and the arts, that justice requires this very ingenious and useful invention should be recorded in the annals of medical and physical science.—The excellent machines contrived by this philosophical artist, are extremely simple in their construction; and particularly his improved *strainers or filtering machines* for water and other fluids, possess the very important advantage, that they may be readily adapted to the purposes of families, work-houses, hospitals, public charities, the navy, or the merchant service, and also to the more particular uses of oilmen, of distillers, of the laboratory, the brewery, &c. A prominent feature in these inventions, is the manner of distilling, without heat; which if applicable to the purposes set forth in the specification of the patent, (See "*Monthly Magazine* for January") may form a new epoch in the history of chemistry. The design of this contrivance is, to free all fluids from their colour and putrescent qualities, almost without any expence of fuel. In a word, we are persuaded that the king's patent has never been more deservedly granted, than in the present instance: as the generality of patents, obtained for medicinal purposes, have too often reflected disgrace on the royal signature, by giving an authoritative sort of sanction to the fanciful productions of mercenary empirics, and ignorant dabblers in medicine. How long will these nuisances of society be permitted to carry on their hazardous experiments and nefarious practices?

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An association has been formed in the city of New York, for the investigation of the mineral and fossil bodies which compose the fabric of the globe, and more especially for ascertaining the natural and chemical history of the minerals and fossils of the United States, under the name of *The American Mineralogical Society*.—Specimens of ores, metals, coals, spars, gypsums, crystals, petrifications, stones, earths, slates, clays, chalks, lime-stones, marbles, and every fossil substance that chance or time may discover, or which may fall in the way of a traveller, and tend to illustrate the mineralogical history of America, will be examined and analyzed free of charge; sufficient pieces, with the owner's leave, being reserved to be placed in the society's collection.

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The committee of the *American Mineralogical Society* have lately published an advertisement, the object of which is, to concentrate in one compendious view, all the information that now lies scattered through the different states of the Union, relative to the means America possesses of furnishing objects immediately requisite for national defence.

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Dr. BENJAMIN DE WITT, of Albany, whose account of the deleterious effects of *Siramonium* we have before noticed, intends speedily to publish a descriptive account of all the principal mineral and medicinal waters found in the state of New York. Few places abound with so many and such

such valuable mineral waters as the northern parts of this State; and as no general history has hitherto been given of their composition, or of the useful purposes they are calculated to serve, a work of this nature may be justly accounted an *American desideratum*.

A *mineral spring* has been lately discovered in *Clinton county, state of New York*, containing very large quantities of a saline substance, which, from some slight trials, is supposed to consist chiefly of Epsom salts, or sulphat of Magnesia.

The *American Philosophical Society* have lately published a circular letter, in which, among other objects of inquiry, relative to the antiquities, customs, manners, languages, and character of the India nations, they invite their countrymen to institute researches into the natural history of the earth, the changes which its surface has undergone as to mountains, lakes, rivers, meadows, &c.

Mr. THOMAS BRUFF, Sen. of Chestertown, Maryland, advertises patent instruments for *extracting teeth in a perpendicular direction*. His advertisement is accompanied with certificates, in favour of his instruments, from Drs. SHIPPEN, WILKINS, and GOODWIN. From the well-known talents of these gentlemen, there is reason to expect much advantage from this invention, in the operation of tooth-drawing.

The student of *Mineralogy* will learn with satisfaction, that he may be supplied from Leipzig with cabinets, containing specimens of minerals, arranged in systematic order, and at the following moderate prices.

A collection of 150 specimens, each deposited in a separate paste-board case, and numbered, corresponding to a catalogue, in which a description is given of every piece, at 6 rix-dollars Saxon currency, or about £1. 1s. 0d. British:—a more extensive collection consisting of 250 specimens of superior value, furnished with a similar catalogue, and packed in drawers, in a red painted case, with lock, &c. for twenty rix-dollars S. C. or about £3. 6s. 8d. and lastly, collections of the best specimens, amounting to 500 in number, the produce of various countries of Europe, many of which are rare, and as yet non-descript, being recently collected, and provided with a complete and instructive catalogue, &c. &c. for 60 dollars, or about ten guineas.

Amateurs are requested to address themselves to Mr. Martini, bookseller, in Leipzig.

According to the half-yearly *catalogue of lectures* delivered during the present season in the *University of Jena*, we find forty separate courses announced on the different branches of medicine, besides those given on clinical cases. Among this great diversity of subjects we shall gratify the English reader by mentioning the following, which will doubtless appear rather extraordinary. On medical anthropology, Prof. LODER; on the opinions respecting the vital principle, Dr. ECKHARD; on some principles of the Brunonian theory, Prof. STARCK; on popular or domestic medicine, Dr. BRETSCHNEIDER; on the art of writing prescriptions, NICHOLAI and GRUNER; on the advantages of disputations and examinations, FUCHS, BRETSCHNEIDER, and BERNSTEIN.—We shall, upon this occasion, only apply the remark of SENECA: *Consumum est quidquid in pulverem sectum est*.

At a late promotion of a candidate, Mr. DIRUF, to the dignity of Doctor of Physic, in the German university at Heidelberg—a solemnity which the reigning Duke and Dukes of Deux-Ponts honoured with their presence, the privy-counsellor, Dr. MAI, delivered a Latin oration on the following curious subject: *Quænam ex paradoxa Brunonis doctrina in praxin medicam emolumenta?*” This singular question was not the only one here proposed, but the learned candidate gave a counterpart to it, by another oration, in which he answered a still more extraordinary query, viz. “*Quænam ex Brunonis doctrina fata pertimescenda?*”

The *Medical Lectures* in Columbia college, New York, commence annually on the second Monday of November, on the following branches:

<i>Chemistry and Natural History</i>	—	Prof. MITCHELL.
<i>Anatomy and Surgery</i>	—	POST.
<i>Midwifery, and Infantile Diseases</i>	—	RODGERS.
<i>Theory and Practice of Physic</i>	—	HAMMERSLEY.
<i>Materia Medica and Botany</i>	—	HOSACK.

Regular *Clinical Lectures* are also given by Dr. Rodgers, in the New York hospital; which is furnished with a valuable collection of medical books.

At the meeting of the *College of Physicians of Philadelphia*, held July 3d, 1798, the following officers were elected, according to the usual forms: Dr. JOHN REDMAN, *President*; WILLIAM SKIPPEN, Jun. *Vice-President*; ADAM KUHN, SAMUEL DUFFIELD, THOMAS PARK, and CASPAR WISTAR, *Censors*; BENJAMIN SAY, *Treasurer*; and THOMAS C. JAMES, *Secretary*.

The newly-established colleges in the *western hemisphere* have set a laudable example, in directing their medical students to write the *Inaugural Dissertations* for the degree of Doctor of Physic, in their native tongue, or more properly, in the language transplanted from Britain to America.—We are happy to observe, that this specimen of good sense has lately been introduced likewise in some of the *German* colleges. The first of these, which broke through the absurd custom of writing them in Latin, was the university of Kiel, in the principality of Holstein, subject to the king of Denmark.—Mr. WILLIAM GEORGE PFEFFERKORN, now Physician to the Infirmary at Altona, was the first graduate in Germany; on whom the titles of Doctor of Medicine and Surgery were thus conferred, after having written his dissertation “*On the disease of the Norwegians, called Radefyge*,” published at Altona, (in German) 1797.

Among the numerous translations of English books into the German language, whether of a valuable or frivolous complexion, we shall at present point out the following, beginning with those which we consider to possess the most merit: “Dr. G. FORDYCE’s *Practice of Physic*,” from the sixth edition; by Dr. C. F. MICHAELIS: 270 pp. 8vo.—“Dr. R. WILLAN’s *Description and Treatment of cutaneous Diseases*, Ord. I. 110. pp. quarto.—“Dr. J. CURRIE’s *Medical Reports on the Effects of Water, cold and warm, as a Remedy in Fevers, &c.*”—“A. THOMSON’s *Inquiry into the Nature, Causes, and Cure of nervous Disorders*,” \* translated from the

\* The German Reviewers express an uncommon and uniform satisfaction at the excellent rules of diet contained in this small treatise; as, without due attention to such rules, it is no easy task to cure a hypochondriac.

the fourth English edition, and accompanied with remarks by Dr. G. F. MUHRY, 83 pp. 8vo.—“Dr. W. FALCONER’s *Observations on the pulse, &c.*” with remarks and a supplement, by Dr. KAUSCH, 178 pp. 8vo.—“Dr. BREE’s *Practical Inquiry on disordered Respiration, &c.*; with remarks, by K. F. A. S. (to whom Dr. MICHAELIS, of Leipzig, who first announced a translation of this work in the Jena Gazette, has assigned the task.)—“Dr. CRICHTON’s *Inquiry into the Nature and Origin of mental Derangement, &c.* 2. vols. 8vo. Goettingen, 1798.—“Dr. T. TROTTER’s *Medicina Nautica*; translated by Dr. C. WARNER, and accompanied with a learned preface, by Professor HUFELAND.—“T. BLIZARD’s *Suggestions for the Improvement of Hospitals, &c.*”

The indefatigable Dr. BEDDOES of Clifton, is preparing for the press the first volume of a periodical publication, intitled “*Contributions to Physical and Medical Knowledge: principally from the west of England and Wales;*” the profits of which (if any accrue) are to be devoted to the Institution for investigating the medicinal powers of factitious airs.—In our next number we hope to be enabled to give an account of the progress of this Institution; and for the last publication of Dr. Beddoes, which is a valuable “*Collection of Testimonies, respecting the treatment of the venereal disease by nitrous acid,*” we refer the reader to our *Retrospect of Medical Literature*, in the concluding part of this Journal.

Dr. UNDERWOOD’s “*Treatise on the Diseases of Children, now first adapted exclusively to the use of Professional Readers,*” is in the press, in an advanced state, and nearly ready for publication. With the same work, the Doctor proposes to publish his “*Chirurgical Treatise.*”

Mr. CHARLES BROWN, of Ely-Place, Holborn, proposes to publish, as early as possible, a volume, intitled: “*Annals of Pneumatic Medicine;*” for the completion of which he solicits the assistance of such gentlemen as are in possession of any facts, relative to the use and effects of factitious airs in diseases.

The third edition of Dr. THORNTON’s “*Medical Extracts,*” with a number of additional plates and many considerable improvements, is now in the press, and will speedily be published.

The second edition of I. TOWNSEND’s “*Physician’s Vade Mecum,*” or an abridged translation of Dr. Cullen’s *System of Nosology, &c.* a very useful manual to the medical student, will appear in a few weeks.

The learned Greek, CORAY, has now ready for the press an elegant version, in German, of the celebrated work of Hippocrates, *on air, water, and climates.* This translation is highly recommended by Professor Sprengel, and will appear at Leipzig in the course of next summer. Of this inestimable work we have authority to announce a speedy translation into English, by Dr. W. Wright.

A work of considerable interest and importance to the medical world is now in the press at Gotha, intitled: “*The History of Inventions, Theories, and Systems, which have prevailed in Physics and Medicine during the Eighteenth Century.*” This historical retrospect is intended to supply the readers of the

reputed *Journal of Inventions, &c.* with all the facts and disquisitions contained in the first twenty-four numbers of that *excellent* periodical publication, now out of print. As we have a copy of this Journal in our possession, we can assert, with a degree of confidence, that its leading principles are founded in rigid impartiality and justice, though occasionally we find some parts tainted with a small portion of egotism. The very learned but acrimonious Professor HECKER, is the supposed Editor of this historical Journal, in which the modern theories of *oxygenating the system—of the chemical action of the gases on, or within, the human body, &c.* &c. are particularly and very keenly contested.

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An abridgment, in two volumes octavo, of that complete and valuable work, *The Physical Dictionary*, by the late Doctor and Professor GEHLER, (in six volumes octavo, with a great number of plates) is now in the press at Leipzig: it is principally calculated for the use of such students of Natural Philosophy, as may not find it convenient to purchase the larger and more expensive work.

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Mr. ACCUM, an ingenious foreigner, resident in London, purposes to publish (by subscription) a work intitled, *Chemico-Physical Aphorisms, comprehending a general View of the Discoveries, Experiments, Observations, Phenomena, and Facts illustrated in experimental Chemistry; with a summary Description of the Use and Management of the principal Apparatus employed by the Moderns in Natural Philosophy.*

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A faithful translation of a late work of considerable merit, and containing much novel matter, has just come from the press, but too late to give a particular account of it, in our "*Retrospect of Medical and Physical Literature.*"—It is intitled: "*Travels in England, Scotland, and the Hebrides, undertaken for the purpose of examining the State of the Arts, the Sciences, Natural History, and Manners of Great Britain: containing mineralogical Descriptions of the Country round Newcastle, of the Mountains of Derbyshire, &c. &c.*" Translated from the French of B. FAUJAS SAINT-FOND, member of the National Institute, and professor of geology in the museum of Natural History at Paris. London. Ridgway.

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A new and enlarged edition of Dr. J. C. SMYTH's work on the jaundice, and particularly on the extirpation of contagion, by means of fumigating (with nitrous gas) rooms and places filled with pestilential vapours, is nearly ready for publication, and will appear in the present month.

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Dr. E. G. CLARKE's small work, intitled "*Medicinæ Praxeos Compendium,*" which has been announced some time ago, will certainly appear early in this month.

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Mr. A. CARLISLE, we understand, will not be able to deliver his usual course of lectures on the general science of anatomy in the present season; on account of other engagements.

\*.\* The following interesting communication is deemed worthy of a place in our first number. It unfortunately did not reach us till the part of the Journal appropriated to such Original Communications had been printed off.

*An Account of the Means successfully employed in preserving the Health of the Seamen, on board his Majesty's Ship Astrea, on the Jamaica Station, in the Years 1787, 1788, 1789, and Part of 1790:—By STEWART HENDERSON, formerly a Surgeon in the Royal Navy, now of the Army Hospital-Staff.*

WHEN we look into the political and medical history of this war, we are at a loss to say, which of the two great enemies of mankind, French principles, or the pestilential disease, has been most destructive. While it becomes the province of the statesman to enact salutary laws, to prevent the baneful influence of principles subversive of all social order, it is no less the duty of the guardians and superintendants of health, to recommend and employ such precautions and means, as prudence and experience have suggested, to prevent the introduction, and check the progress of a formidable enemy—pestilential disease; which commits such ravages on the human race, and seems even yet to bid defiance to the medical art.

The prevention of disease often depends on circumstances, which to some appear trifling, and, therefore, are but little attended to: they are, however, found by experience to be of eminent utility and importance. This, I trust, will be shewn, in the following faithful account of the *Astrea*; being an extract from my Medical Register, with practical remarks on the diseases; which I intended to have offered to the public, on my arrival from the West Indies, in April 1790, had leisure permitted.

Previous to giving an account of the means employed on board the *Astrea*, I think it proper first to observe, that the great and celebrated circumnavigator, Capt. COOK, proved to the world the possibility of carrying a ship's crew through a variety of climates, for the space of near four years, without losing one man by disease; a circumstance which added more to his fame, and is supposed to have given a more useful lesson to maritime nations, than all the discoveries he ever made. He has shewn, that health may be preserved, on the most distant expeditions, undertaken either for the purposes of war or commerce, and by means no less simple than efficacious. It is true, he possessed advantages, which few ships of war, on any service, can expect to have; a large roomy ship, to contain a small number of chosen men, all volunteers, provided with every necessary,



92 *Mr. Henderson, on the Preservation of the Health of Seamen.*

necessary, and cloathing adapted to different climates. Articles of diet, and preventives, which other ships are not supplied with; and the provisions of a superior quality to what is generally allowed; above all, the ship almost constantly at sea, and not obliged to put into unhealthy harbours.

Other judicious and skilful commanders, who have since adopted the means he pursued, have met with equal success, though under less favourable circumstances; this, however, does not diminish the just praise of that illustrious navigator, who well merited the honorary medal bestowed upon him by the Royal Society, and presented by the president, Sir JOHN PRINGLE.

His Majesty's ship *Astrea*, of 32 guns, and 200 men (peace complement), commanded by Capt. PETER RAINIER (now Vice-admiral, commander in chief of his Majesty's ships in India), was fitted out at Woolwich, in October 1786, and sailed for Jamaica the 6th of January, 1787. I did not join her until a few days before she sailed, so that I had it not in my power to select the medicines most useful for the climate. My predecessor had previously ordered the medicine chest from the Apothecaries' Company, perhaps without knowing her intended station. I found, however, that the men were judiciously selected, many of them having lately returned from the West Indies. Upon inspecting the whole of the crew, I had occasion to request ten men might be sent to Haslar Hospital, as being unfit subjects for a hot climate, and, indeed, for the service; being affected chiefly with ruptures and old ulcers.

We were not allowed any preventive articles of diet; no four-cront, essence of spruce, or malt, orange or lemon juice, potatoes, sugar, or wine for the sick; which necessary articles have been since liberally supplied to his Majesty's ships, in consequence of the able representations of Dr. TROTTER, physician to the fleet, and other medical gentlemen in the navy; there is now, likewise, a better allowance of vegetables when in port; which, as appears from the medical history of the fleet, has had a very salutary effect.

As we could not call in these auxiliaries, it behoved us to redouble our exertions, and to bestow the greatest attention on those in our power, and which we knew from experience to be most useful. I judged that the health of the men, and exemption from the diseases of the climate, would, in a great degree, depend on cleanliness, ventilation, keeping the deck below free from moisture, cold-bathing, preventing irregularities, and exposure to marsh-effluvia; constant employment for the body and mind; but yet to avoid working in the sun before the sea-breeze set in; and to provide, when the service would admit, the liberal use of vegetables and other antiseptics.

Such

Such were the means I proposed for the prevention of disease: and from Captain Rainier's character, as a humane and experienced officer, and his long acquaintance with hot climates, I had every reason to expect, that whatever would tend to a salutary effect, would meet with his approbation and support.

I soon found that he well understood that important part of an officer's duty; and it is from his judicious orders, regulations, and attention on the part of the officers, in seeing them well executed, the means employed for preserving and restoring health were so successful, that not one of the ship's company died on board, and only four were at the hospital from disease, during the three years the ship remained on the Jamaica station: a great part of that period we lay in a very unhealthy harbour (Kingston): a singular circumstance, contrasted with what has since happened in that part of the world.

On the passage, we stopped fourteen days at Ferrol and Corunna, where we were supplied with fresh beef and vegetables; and likewise at Madeira, where we remained a week. The men, as usual, were put into divisions or squads, under certain officers, who inspected their cloathing, to see that they kept themselves clean and orderly, particularly on Sundays, when they were mustered by the commanding officer. During the whole time of our lying on the station, cold bathing was almost daily used. When in harbour, a sail was put over-board, sunk to a certain depth, and suspended from the yard-arm, to prevent danger from the sharks, or any other accident to such as might not have learnt to swim. When the lower deck was washed, fires were kept in Brodie's stoves, until it was completely dried, and well fumigated by the usual mode, as well as in rainy weather, or when there was much moisture in the atmosphere. A fire was likewise put into the well, after being swabbed dry, which was more effectual in destroying the noxious air, than the custom of letting in water by the pumps. To prevent those irregularities on shore, which too often disgrace the character of British seamen and soldiers, and expose them to the exciting causes of disease, Captain Rainier very prudently refused any leave of that kind to men he could not depend upon. Indeed, after a few months abstinence, they did not seem solicitous to obtain it; knowing, they had no money to purchase their favourite, but baneful liquor, or power to sell their necessaries, with impunity. I believe the *Astrea* was the only ship in the navy, which had no occasion for what is called a liberty-book, while the crew seemed perfectly satisfied and contented without that permission; a proof, I think, of their being under excellent discipline. It is true, they were allowed on Sundays, when in port, to visit their acquaintance in the different ships in the squadron, and on those occasions a most complete scene of drunkenness was usually exhibited; scarcely a man but was obliged to be hoisted on board, and in a situation that required no little management

management to prevent fatal consequences. On those days I thought it necessary to be on board, and to give directions that they should be placed properly in their hammocks. This necessary indulgence, however, was sometimes productive of sickness, but not of that tendency which would have happened, had the same inebriety been committed on shore; and we considered, that constant confinement might have had a worse effect, than the irregularities they were guilty of. When not employed on duty, amusements and diversions were promoted and encouraged by the officers. Neither was there any restriction to women coming on board; which did away one principal motive for their wishing to go on shore.

To guard as much as possible against the bad effect of marsh effluvia, the ship was always anchored as far from the shore, as could in safety be admitted; and in the different islands we visited, St. Domingo, Porto-Rico, Curassoa, Cuba, &c. care was taken to procure fresh beef, and plenty of fish, by hauling the *seine*. This last was never neglected, and it proved to be a very nutritious and proper food in those countries. They were likewise supplied with vegetables, oranges, and limes, which grow in many parts spontaneously; these were procured in abundance, and when it became absolutely necessary to employ the ship's company in wooding, (which should never be done, if possible, in hot climates) the parties were enjoined to be on board before dark, by which they escaped the bad effects of the night air. This service has frequently occasioned the loss of many seamen. The watering duty, another service very destructive to the health of seamen, was performed by blacks, who manned the long-boat, and whose constitutions were congenial to the climate.

These were the principal means we employed for preserving the health of our men; the consequence was, as I have already related, that not one of the crew died on board; a fact, which may be seen by the ship's books in the Navy-office; though sickness will always prevail more or less, on board of ships, from causes which no human exertions can prevent. I am persuaded also, that in time of war, from the nature of the service carrying on, the regulations before stated, and the observance of them, cannot be so strictly adhered to; yet I am convinced, from what I observed during nearly the five years I was employed in the West Indies last war, that a great deal of sickness might have been prevented, and many valuable lives preserved, had such salutary means been better understood, and attended to.

This, in my opinion, points out the necessity of a code of salutary regulations being established, for the guidance of commanding officers of his majesty's ships, who may not have had an opportunity of becoming acquainted with the means of prevention, and are liable to err, from a mistaken idea of the causes of disease. Should any general sickness prevail, an enquiry might be instituted, to learn whether it proceeded from neglect or unavoidable causes.

GENERAL

GENERAL STATE OF THE WEATHER.

As the weather is justly supposed to have a considerable effect in producing disease, I think it necessary to give some account of it, during the period of three years we remained on the Jamaica station.

I have already observed, that the *Astrea* sailed from England for Jamaica in the beginning of the year 1787. Except three or four slight venereal cases, we had no sick on board, having sent to the Hospital those whom we deemed improper subjects for the service. In the channel we experienced a great deal of cold, boisterous weather, before we reached Curruna; during which time four men were seized with pulmonary complaints, and one with acute rheumatism. After leaving the coast of Spain, we arrived at that delightful and salubrious island, Madeira. As we approached the warm latitudes, a few, chiefly marines, who had never been in a hot climate before, complained of head-ach, and febrile symptoms, which were removed by bleeding, and other evacuations. In March and April we were on our station at Port Royal. In May and June, when the periodical rain set in, we were on a cruize, in consequence of which we did not suffer from the rains or heat of those two months, and benefited by the refreshing breezes met with at sea; and it has been frequently remarked, that the mariners enjoy a greater degree of health, when at sea in the West Indies, than in port at any other part of the world. Commanding officers would therefore act judiciously, in keeping ships as little as possible in harbour on that station. Commodore Gardner, then commanding his Majesty's ships in that quarter of the globe, was in the habit of keeping the Squadron much at sea, which had a very salutary effect on the crew. During the whole of August, September, and October, which are, what are called, the hurricane months, we went up the harbour, and anchored pretty high, towards Rock-Fort, to avoid the danger of those furious winds, which are sometimes attended with dreadful destruction, both at sea and on shore; this was experienced when I was at Jamaica, in October 1780; during these months deluges of rain fell, which obliged us to keep the awnings almost constantly spread and sloping; the sea-breezes were interrupted, and the atmosphere in general became excessively close, sultry, and loaded with moisture, attended with thunder and lightening.

During this time, a languor and dejection of spirits were felt by all on board. As the weather prevented any duty from being performed, and conscious of a predisposition to disease, we judged it adviseable, to promote every kind of sport and diversion. Dancing, that favourite amusement with seamen, was cheerfully encouraged, as we fortunately had a fiddler on board; a more useful man in a ship than a trumpeter, who

who I believe is generally allowed to his Majesty's ships, but for what purpose I have yet to learn.

In the beginning of November we sailed to Fort-Royal, without having a sick man on board, or one left behind at the Hospital; the three men sent thither in September had returned to the ship. Such an extraordinary and uncommon state of health, I cannot impute to any other circumstance, but the salutary regulations above-mentioned, which had been strictly enforced: and above all, that the men were not allowed to go on shore, and thereby less exposed to the exciting causes of disease.

While the ship lay anchored from the main land, as far as safety would permit, we enjoyed the benefit of the sea-breeze, when it did not reach ships who were nearer the shore; for near these ships it frequently blows but faintly, and partially. In November and December, the weather becomes more settled; a fresh North wind blows in the day, from the continent of America, and in the night a strong land-wind, carrying with it a considerable quantity of marsh-effluvia; at this time the greatest sickness generally prevails in the town of Kingston. As the ships at Fort-Royal are not entirely out of the reach of its influence, the best way to avoid it is, to put to sea; the cold North winds un-impregnated with that noxious exhalation, will preserve health, and speedily recover convalescents; as we experienced in several cases of remittent fever. The state of the weather during the other two years, varied but little, except in the hurricane months of 1789; we had not the usual rains and squalls, which distinguish that season: the sea breezes became more interrupted, and changeable; for the most part, indeed, a calm prevailed, and the heat was extreme: Fahrenheit's thermometer, during the whole of September, was not under 90° in the shade; but in the beginning of October, a very considerable and sudden change took place in the temperature of the air, which was followed by an epidemic catarrh in the squadron, and very prevalent among the troops and inhabitants on shore: very few escaped it; and as comparatively few persons were attacked this year with the endemic remittent fever, it was supposed by many, that the qualities of the air had undergone some change, which had produced this influenza, and prevented the prevalence of the fever. In my opinion, however, our exemption was owing to the want of the usual quantity of rain, one of the necessary agents in producing marsh-miasmata; Fahrenheit's thermometer, during the whole of our lying on the station, seldom exceeded 82 or 83 on board, when not exposed to the rays of the sun.

*No. 7, Lancaster-Court, Strand,  
Feb. 20, 1799.*

S. HENDERSON.

CRITICAL RETROSPECT  
OF  
MEDICAL AND PHYSICAL LITERATURE.

FOR FEBRUARY, 1799.

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*\* \* This Department of our Journal will be continued regularly every Month. In the present Number, we are obliged, for want of room, to confine ourselves to the Review of the latest and most valuable foreign and domestic Publications.*

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NATURAL HISTORY AND BOTANY.

*Flora Atlantica, five historia plantarum, quæ in atlante, agro Tunetano et Algeriensî crescunt ; auctore R. DESFONTAINES.* Number first. Folio. Paris.

The first number of this splendid work contains the three classes of the Linnæan System, viz. the *Monandria*, *Diandria*, and *Triandria*, represented on thirty elegant engravings, and accompanied by the Latin text, or explanations, printed on fifteen separate leaves, in a very superior style.—We cannot withhold our praise and admiration from a work of such magnitude, carried on in a country, and under circumstances, the most unfavourable to expensive and costly undertakings.

*Tableau élémentaire, &c.* “*Elementary Picture of the Natural History of Animals :*” by G. CUVIER, of the National Institute of France, &c. 8vo XVI. and 710 pp. with indexes, and fourteen copper plates (8 liv.) Paris. Baudouin.

This valuable work is designed immediately for the use of the pupils studying Natural History in the central schools. It contains, however, such a number of new observations on the prevailing systems of this science, and so many considerable changes, that it is justly intitled to the attention of every naturalist.

*Auswahl schöner Gewächse, &c.* “*A Choice Collection of rare and beautiful plants : being a continuation of the American plants :*” Number III. from Table 201 to 250 ; fifty coloured plates, and one sheet text ; 8vo. (4 rix-dollars.) Nürnberg. Raspe.

The engravings, as well as the colouring, is more correct and chaste in this, than in the earlier numbers. Most of the plates are faithful copies from the works of our celebrated *Curtis*, and the no less famous botanist, Professor *Jacquin*, of Vienna. From the magnificent collection of plants, by the latter, we find in this number several pieces of sorrel (*Rumex acetosa*, Lin.) represented with truth and elegance.

*Nouvelle Mécanique &c.* *A New Analysis of the Mechanism of Motion in Men and Animals :* by J. P. BARTHEZ, 8vo. Paris. Carcafonne.

The author divides this treatise into six principal sections, explaining successively the mechanism of the different classes of animals ; the progressive motions of man and quadrupeds, as well as of the animals that creep, swim, and fly.

In an introductory discourse, written with dignity and perspicuity, M. BARTHEZ states his ideas respecting the nature of the vital principle, and the first cause of the phenomena he endeavours to explain.

Numb. I.

H

CHEMISTRY

## CHEMISTRY AND NATURAL PHILOSOPHY.

*Demonstration de la Fausseté, &c. "A Demonstration of the Falsity of the Principles adopted by the Modern Chemists; being a Supplement to the Treatise on the Dissolution of Metals;"* by Citizen MONNET. 8vo. 400 pp. (4 liv. 10 sols) Paris, Jansen.

THE author begins with combating the opinion of Scheele, respecting the *spathic acid*, which he calls the *vitreous acid of Spath*. He next adverts to the *supposed saccharine acid*, which, in his opinion, is no more the acid of sugar, than the vitriolic acid distilled upon spath is the acid of that substance; an opinion in which he is supported by the authority of MACQUER and WIEGLEB.—The acid of tartar, according to citizen Macquer, is composed of marine acid, oil, earth, and fixed alkali.—In examining the properties of galls, and the *gallic acid*, he attempts to refute MORVEAU's assertion, that the colouring principle (astringent matter) contained in galls, affords this particular acid.

Although the author does not fail to illustrate his singular assertions by numerous experiments, instituted by himself, on the chemical properties of the substances he has analyzed, yet we are persuaded that his illustrations would have suffered no derogation from the merit they possess, had he treated his respectable opponents with more liberality and politeness; for we frequently meet with such expressions in his polemical treatise, as are equally unworthy of a philosopher and a man of science.

*Grundriss der Naturlehre, &c. Elements of Natural Philosophy; being a Text-book for the Use of Chemistry in the Royal Medico-Chirurgical College of Berlin.* With two plates. 8vo. 326 pp. Berlin. Hartmann. 1798.

THE present summary was compiled, in consequence of an intimation given to the author by the committee of the Prussian government appointed to superintend and regulate the affairs of literary institutions; as there was evidently no elementary treatise in the German language, in which the outlines of physical science were properly connected with the fundamental principles of modern chemistry. This intention the author has accurately and completely fulfilled; and, although he is considerably indebted to the labours of his predecessors, who have furnished him with his principal materials in general physics, as well as in chemistry, particularly to *Klingel* and *Gren*, he is, nevertheless, entitled to well-earned commendation for having judiciously digested a compendious and valuable school-book.

*An Inaugural Dissertation, shewing in what Manner pestilential Vapours acquire their acid Quality, and how this is neutralized and destroyed by Alkalies, &c. &c.* By A. C. LENT, Citizen of the State of New-York. 8vo. 54 pp. New-York. Swords. (May 1798.)

THIS perspicuous and well-written essay possesses a just claim to honourable mention here; and the more so, because the doctrines advanced in it, are professedly drawn from the Lectures of the present Professor of Chemistry, in Columbia-College, Dr. MITCHILL, the American Fourcroy.

We have not room to insert a synoptical view of this new doctrine, which, in a great measure, corresponds with Dr. Trotter's opinion relative to

to the extirpation of pestilential vapours, and of which he has announced his intention to give an abstract in the second volume of his '*Medicina Nautica*\*.'

*A Sketch of the Revolutions in Chemistry.* By T. P. SMITH. 8vo. 40 pp. Philadelphia. Smith. 1798.

THIS 'Sketch' comprises the substance of an annual oration delivered before the Chemical Society of Philadelphia, relative to the progress of chemistry in different countries, within the preceding year. Mr. Smith has materially deviated from the plan prescribed by the society; for, in lieu of confining himself to the chemical history of the year, he presents a general view of the revolutions, which this branch of knowledge has undergone in different ages and countries.—Although we differ from the author in some of the positions advanced by him; for instance, that the ancient allegories which appear to have a *physical* relation, "must be passed over as the unmeaning offspring of ignorance and superstition," we must ingenuously allow that this oration is not without a considerable share of merit; as it contains an interesting, though incomplete, historical account of a science, in which a new æra is opened to the philosophic inquirer.—We shall conclude this article by expressing our satisfaction on learning, that the science of chemistry begins to be studied with taste and avidity by the females of the transatlantic continent.

#### MATERIA MEDICA AND PHARMACY.

*A Praktische Arzneymittellehre, &c. Practical System of Materia Medica.* By JUSTUS ARNEMANN, M. D. and Professor in the University of Gottingen. Third edit. enlarged and improved, 8vo. 590 pp. Gottingen, Vandenhoek, &c.

ALTHOUGH the author has made but few additional improvements in the second edition of this work, which appeared in 1795, he has arranged the whole of its materials in a more conspicuous manner, particularly the therapeutical properties of *mineral waters*, and the official *salutious airs*; each of these forming here distinct classes of medicinal remedies. He has further subjoined a new class of the *cooling* remedies, among which *nitre* occupies the first place. Besides these additions, the learned Professor has enriched the *Materia Medica* with a number of new and useful improvements, not included in the former edition, and of which we shall here only notice the *carex arenaria*, and the *calx antimonii sulphurata*, which are very properly intitled to a place in that excellent work. The present volume contains what are strictly called *medicinal* substances; and as the *chirurgical* remedies, according to the preface, are intended to compose a *second* volume, similar to that of the second edition, this circumstance, however, should have been expressed so in the title page.

*Collections for an Essay towards a Materia Medica of the United States, &c.* by B. S. BARTON, M. D. &c. 8vo. 49 pp. Philadelphia. Way and Groff. 1798.

THE author of this ingenious Essay is, unquestionably, the first American, who has attempted to furnish his countrymen with a *Materia Alimentaria*

\* Vid. under the head of *Medical and Physical Intelligence*; p. 80 of this number.





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*Investigation of the antisyphilitic Virtues of the Nitrous Acid.*" These  
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MEDICAL REVIEW, which, relative to the above mentioned '*Essay*' of Mr.  
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\* Vide page 130  
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— 132 — of the same 'Collection,' where three remarkable cases of lues  
two first of which it appears, that the nitrous acid performed the cure  
mercury.

*Alimentaria* and *Materia Medica* of their native soil. On the former, we find but few particulars, although on the latter there is an account of several indigenous plants of America, which promise to be useful in the practice of physic. He pursues his inquiries beyond the labours of the BARTRAMS, of COLDEN, CALM, and SCHOEPPF; and appears emulous to reveal the hidden treasures of the vegetable world. Too long have the natives of the transatlantic continent been indebted to foreigners for genuine and satisfactory information, relative to the plants of their own country; and, even at the present day, the German student may obtain a more accurate knowledge of the trees and shrubs of North America, from the untranslated works of WANGENHEIM, DU ROI, HEDWIG, BRIDEL, JAQUIN, &c. than they can find in any publication which has appeared in the *English* language. — We cannot transcribe, at present, the different *new* vegetables which the industrious professor has indicated in his *Materia Medica*, but we shall endeavour to communicate them in some future number of our Journal.

Dr. Barton has promised, at the conclusion of this Essay, to publish "*Some Strictures on the Classification of Dr. Darwin*," which we shall take the earliest opportunity of laying before our botanical readers.

#### MEDICINE AND SURGERY.

*A Collection of Testimonies respecting the Treatment of the Venereal Disease by Nitrous Acid*; published by THOMAS BEDDOES, M. D. 8vo. XVII. and 277 pp. London. Johnson. 1799.

This collection is the result of Dr. Beddoes's indefatigable exertions in the cause of scientific truth and medical improvement, particularly as it stands connected with the important subject of the nitrous acid, as a remedy in lues. It exhibits in one view the collective mass of evidence for, and against, the use of this powerful agent, in that disorder. The unquestionable facts here adduced, afford an extensive and very interesting view of the nitrous acid, and analogous antisyphilitics, as hitherto observed and detailed by a considerable number of medical gentlemen, no less eminent for their abilities and experience, than respectable for the stations they occupy in society. Among these, it will be sufficient to mention the respective names of Drs. TROTTER, ROLLO, GEACH, SWEDIAUER, CURRIE, CARMICHAEL, CARRICK, &c.

The testimonies thus collected and exhibited, appear, on the whole, to be considerably in favour of the new medicine; although impartiality obliges us to observe, that there exists some disagreement in the evidence, respecting the sensible changes in the patients, on whom these remedies were tried with success. Such discordance, however, is not a novel phenomenon in the practice of medicine; and, considering the precipitate manner in which new remedies are generally administered; the want of proper attention to the peculiar habits, constitutions, and predisposing causes, and other concomitant circumstances of the patient—imperfections not seldom observable among a certain class of practitioners, (such, especially, as have too many inveterate cases under their care *at one time*); we have reason, considering these circumstances, to be highly satisfied with the reports of the *inefficacy of the acid*, as indicated by certain superficial writers.

Indeed, the account given by Dr. Currie is so satisfactory and conclusive, that a few extracts from the masterly and judicious letter\* of that excellent physician will, we should imagine, be deemed sufficient to confirm the favourable

\* See page 129—136 of Dr. Beddoes's *Collection*.

favourable opinion almost generally entertained on this valuable accession to the stock of the *Materia Medica*.—We have no intention, however, to take any particular notice here of the singular controversy now subsisting on that subject.—

“The encouragement arising from the three cases\* just mentioned, led me to try the nitric acid in a variety of other cases. In some of these, my success has apparently been complete; in others, there has been evident benefit, without a perfect cure; and in others, it has seemed to fail entirely. It is not a little curious, that in some of the cases in which I have succeeded, the symptoms were what are called *secondary*, and the disease in its most rooted and obstinate state.”

The uncommon success with which the use of this acid was attended in another patient of Dr. Currie's, named *Elkins*, claims further and particular notice.—“We prescribed (says the Doctor) the nitrous acid, and his sufferings abated from the third day; and being continued, the thickening of the pericranium and the node of the tibia entirely disappeared, with all his other symptoms. He took the nitrous acid, in all, to the quantity of eight ounces, in eight gallons of water, which he drank in sixty days.

“*Elkins* has been nearly a year discharged, and has never had any return of his complaints. This case has made some noise, and I have endeavoured to attract the attention of several of my brethren to it, as decisive of the influence of the acid in this destructive disease.

“In the quantities in which I have prescribed the nitric acid, it has been uniformly salutary to the constitution; in this respect, its action contrasting very happily with that of mercury.

“I have experienced the effects of nitric acid in complaints of the stomach, hypochondriasis, asthma, and some other diseases, as well as in the hepatitis.”

The second division of Dr. Beddoes's Collection, contains *Observations on the cases published by Mr. BLAIR*, in a pamphlet, intitled, “*Essays on the Venereal Disease, and its concomitant Affections, illustrated by a Variety of Cases. Essay I. Part I. &c.*”—In this section we find some severe strictures, 1. on the “twenty-three experiments with the acid of nitre, the citric acid, and the oxygenated muriate of potash, in primary symptoms;” 2. “on twenty-six cases of confirmed syphilis, wherein the acid of nitre was exhibited;” and, 3. on “eleven trials with the oxygenated muriate of potash, in advanced stages of the lues venerea.” In all of these, the author's decided opposition to the new remedies, and his invincible predilection for *vetus amicus* mercury is so very conspicuous, that his conduct, on these occasions, requires no further comment or notice from us.

In the third and last division of this work, Dr. Beddoes furnishes us with his own “*Remarks on various Questions that have arisen during the Investigation of the antisyphilitic Virtues of the Nitrous Acid.*” These remarks are prefaced with extracts from the *BRITISH CRITIC*, and the *MEDICAL REVIEW*, relative to the above mentioned ‘*Essay*’ of Mr. Blair's, and of which we shall only say, they are in one strain, and perfectly in character! As we have already declined entering into the merits of the controversy, relative to the real or pretended effects of the nitric acid, we shall only add here, *en passant*, that in the testimonies adduced by Dr. Beddoes, there is such a mass of evidence in favour of this substance, as an excellent substitute for mercury, in almost every stage of lues (if the constitution of the patient, and other collateral circumstances be

\* Vide page 130—132 of the same ‘*Collection*,’ where three remarkable cases of lues are related; in the two first of which it appears, that the nitrous acid performed the cure without the use of mercury.

be properly attended to) that Dr. Beddoes, as standing on higher ground, may triumphantly and successfully direct the shafts of criticism, and pointed satire, against his feeble antagonist. He concludes this respectable 'Collection' with eleven additional documents, in an Appendix, which, in our opinion, are sufficient to remove every remaining doubt, with respect to the unfounded suspicions, and illiberal aspersions thrown on the subject of the present inquiry, by his invidious opponents.

*Cases of the Diabetes Mellitus; with the Results of the Trials of certain Acids and other Substances in the Cure of the Lues Venerea:* By JOHN ROLLO, M. D. Surgeon-General, Royal Artillery. Second Edition, with large Additions. London. Dilly.

To diffuse the knowledge of the new method of treating the diabetes, and to place this publication within the reach of a greater number of readers, the learned author has been induced to compress the present edition into one volume. In the preface, we meet with two interesting letters from CHISHOLM; from the second of which we shall extract the following passage: "The nitrous acid is a most safe and efficacious remedy in hepatic complaints of old standing, in all *venereal obstructions*, and diseases depending upon them.

This valuable work is divided into two PARTS: the first contains "*Cases of the Diabetes Mellitus, with a general view of the nature of the disease and its appropriate treatment: including a concise review of what has been written on the subject; an answer to some objections urged against the doctrine we have delivered; and chemical experiments on urine and sugar.*" p. 17—477.

In this extensive range of investigation, we find much curious and interesting matter, particularly in the very judicious and accurate chemical experiments, instituted to illustrate this subject; and Dr. Rollo concludes this part with the following result: "1. That sugar consists of carbone, hydrogen, and oxygen; and may be considered as a *pure vegetable oxide*; 2d. That sugar of milk is composed of the same principle, but contains more oxygen, and considerably less charcoal; 3. That gum differs from sugar, in containing, besides carbone, hydrogen and oxygen, both lime and azote; 4th. That vegetable farina cannot be converted into saccharine matter, without the joint action of oxygen and water, the first of which appears to be absorbed, and the last decomposed during this process; 5th. That when sugar is deprived of its oxygen, or combined with other substances, it loses its characteristic properties, and is no longer susceptible of the vinous fermentation; 6th. That neither vegetable nor animal mucilages, in their pure state, are susceptible of this process.

"From a review of the whole, the propriety of the different medicines which have been employed in diabetes, must be obvious, more particularly the pure alkalies, lime-water, and the different sulphurates, all of which must counteract the formation of saccharine matter in the stomach.—We also readily see the necessity of a diet, consisting entirely of animal food, being the only one which does not furnish oxygen, and that peculiar but simple combination of carbone and hydrogen, constituting the basis of sugar, and without which it cannot be produced."

The *second Part* of this truly practical work, presents us with "*The Results on the trials of various acids, and some other substances in the treatment of the lues venerea:* by WILLIAM CRUICKSHANK, and other Surgeons of the Artillery." p. 481—625.—To this part the author has subjoined a *new* chapter, in which he gives a correct and circumstantial

stantial narrative of the trials made by Dr. WITTMAN; a table containing a list of the patients afflicted with the venereal disease, "who have been treated in the Royal Artillery Hospital at Woolwich, by the new remedies;" and some additional remarks on the effects of the nitrous acid, the oxygenated muriate of pot-ash, &c. in the lues venerea, by Mr. CRUICKSHANK.—From these last, we shall select the following pertinent and conclusive passages:

"Eighteen months have now elapsed since the first cases treated by these remedies have been cured; and of the first seventeen, which were more immediately under our own management, *not one has relapsed, nor have the secondary symptoms made their appearance in a single instance.* That the disease has been completely eradicated, can therefore admit of no doubt.—In our first trials, we confined ourselves, in a great measure, to primary affections; but for some time past no distinction has been made, and the secondary as well as the primary symptoms have been all treated on the same plan.

"The total number which have now been cured in the Hospital, since the beginning of March, 1797, amounts to 155, as will appear from the table; of these, 13 had the secondary symptoms of the disease. This small number of secondary cases proves, in a great measure, the certainty and efficacy of this mode of treatment; for, as Dr. Wittman employed these remedies in all venereal affections, whatever their nature might be, had the cures not been perfect, the secondary disease must have been very common; besides, of the 13, three only could be ascribed to this case, and these were all afterwards cured by the oxygenated muriate of pot-ash. Of the remaining ten, 4 appeared to be the natural consequence and progress of the disease, and six followed a course of mercury."—P. 619, 620.

"Of the different remedies employed, we formerly gave the preference to the oxygenated muriate of pot-ash, \* and we are now more convinced of its superiority; for there have been many cases where it has succeeded much better than the nitrous acid." P. 624.

"We do not presume to account for the numerous *failures* which have been recorded, but suspect that they are to be ascribed either to *some irregularity or impropriety in the administration of the remedies, or to a want of perseverance and steadiness in the practitioner or patient.* It is also proper to remark, that in these failures, the remedies were too seldom varied, so that when one did not answer *immediately*, it was dropped, and mercury had recourse to. Now we are confident, that much of our *uniform success* has been owing to the method, which was very early adopted, of changing the preparation, whenever it seemed to produce no further effect on the disease or constitution. In this way, a number of cures were quickly obtained by the oxygenated muriate of pot-ash, &c. where the nitrous acid, &c. had not so immediately succeeded."

*Essai*

\* Mr. Cruickshank judiciously varied the proportion, as well as the combination of this substance with calomel, &c. in different patients. Thus he directed, according to the circumstances of the case, and the greater or less degree of severity manifested by the disease in the constitution of the patient, from 10 to 15 grains of the oxygenated muriate of pot-ash, four times a day; *with or without* the addition of calomel, from one to two grains daily—besides which he directed the saturnine lotion to be applied in those cases which required this external aid; and his success has been such as might have been rationally expected from the scientific and cautious prescriber of these remedies.

*Essai sur les Fièvres intermittentes, &c. An Essay on intermitting Fevers, the Action and Use of Febrifuges, particularly the Peruvian Bark.* By L. D. A. BOUFFEY, 8vo. 424 pp. (5 liv.) Paris. Croullebois.

The principles here laid down are stated with precision, and throw new light on this branch of human maladies. The character of fevers is considered under their different appearance, and the relative value of febrifuges ascertained. Bark itself, so justly considered as the best febrifuge we know, but which is every day used in too empirical a manner, is here reduced to practical rules, such as to make its exhibition more safe, and its success more certain. The Author happily reconciles the chemical action of this medicine with its most sensible effects in the animal economy, and thence deduces practical rules for applying it with advantage.

*Memoria di LUIGI-EUSTACHIO POLIDORI, sopra un tifo contagioso, &c. Memoirs respecting the Cure of a contagious Typhus Fever lately prevalent in Tuscany.* Pisa. 1798.

The method which the Author has successfully practised in that disorder is the subject of this memoir. The regimen he recommends, consists in cordials, rich soups and broths, with toasted bread, in small quantities, but often repeated; mustard to be added three or four times a day; that substance being, according to CALLITZEN, preferable in this case to the bark. The ordinary beverage should be generous wine, in small quantities, to be progressively increased, adding three or four times in the day the cardiac confection of the Edinburgh Pharmacopœia; at night a sudorific bolus, with ten or twelve drops of laudanum in a glass of good wine; this dose also to be gradually increased. Friction of the vertebræ, and likewise of the extremities, with the palm of the hand, applying the volatile liniment of the London Pharmacopœia; a frequent renovation of pure air, and sprinkling the sick chamber with vinegar, are recommended; and to abstain as much as possible from the use of evacuating and debilitating remedies.—The Peruvian bark Dr. Polidori has uniformly found useless, and often hurtful; but he has not explained the causes which could have produced so singular an effect. In another part of his dissertation he informs us, that he has not employed blisters; being apprehensive of too much evacuation. With every respect for the abilities of the Author, we cannot consider this assertion as accurate or scientific. The experience we have had of the operation of this remedy, does not permit us to entertain a doubt, that it acts as an immediate stimulus; and as such, Dr. Polidori might have prescribed it with safety, and probably with benefit to his patients.

*Oeuvres Medico-Chirurgicales, &c. "Medical and Chirurgical Essays, containing Observations and Dissertations on different Subjects of Medicine and Surgery."* By COLLOMB. 8vo. (6 liv. 10 sols) Paris. Croullebois.

This is a work of great merit, and will form a valuable addition to a medical library. Among its important contents, are dissertations on ossification; on the lymph, cancer, gout, the organs of sight; Miss Stephens' medicine for dissolving the stone in the bladder; on persons born deaf and dumb; a number of details and observations on gravidity and delivery; on gun-shot wounds in the lungs; on cancer; on the uterine polypus; on the prolapsus uteri, and other objects deserving the attention of the medical inquirer. It concludes with a short treatise on venereal disorders.

Medical

*Medical Inquiries and Observations: Containing an Account of the Yellow Fever, as it appeared in Philadelphia in 1797; and Observations upon the Nature and Cure of the Gout and Hydrophobia.* By BENJAMIN RUSH, M.D. &c. Vol. V. Philadelphia, 8vo. 236 pp. 1798. Dobson.

AFTER having furnished an accurate account of the weather and diseases which occurred during part of the year 1795, and the whole of the year 1796; commented upon the supposed connection between pestilential epidemics and the occurrence of earthquakes, the eruptions of volcanoes, the appearance of comets, meteors, &c.; and sketched a continued analysis of the weather and diseases, from the close of his former work on this subject, to the beginning of the epidemic which appeared in 1797, the learned author proceeds to inform us, that no premonitory symptom was observed, except the tooth-ach, which obviously and remarkably preceded the attack of the fever in several cases.

The Doctor next enters into a detail of the symptoms of the Yellow Fever, as they appeared in the blood-vessels, in the excretions, in the nervous system, in the senses, in the lymphatic system, in the skin, and in the blood. Many interesting and valuable observations occur here; but the mode of treatment, in general, does not appear to have been very different from that pursued in the epidemics of 1793 and 1794. Mercury administered to such extent as to produce ptyalism, was not a little depended upon; and the author lost only two patients in whom this effect was not produced.

*Observations on the Causes and Cure of Remitting Bilious Fevers. To which is annexed, an Abstract of the Opinions and Practice of different Authors; and an Appendix, exhibiting Facts and Reflections relative to the Synochus Interoides, or Yellow Fever.* By WILLIAM CURRIE, M.D. &c. Philadelphia, 8vo. 227 pp. 1798. Palmer.

AFTER some cursory remarks on the "Causes of Bilious Fevers," and on the diffusion of "febrile miasmata through the air," Dr. Currie enters into a more minute discussion of the two following interesting questions:

"1. Is the Bilious Fever, or any other variety of the Remitting Fever, occasioned by marsh-miasmata, or the exhalations from putrid or putrifying vegetables, ever contagious?"

"2. And was the Yellow Fever, which occasioned such deplorable mortality in Philadelphia, in the summer of 1793, and which has appeared in other sea-port towns in the United States of America since that period, only a higher grade of the Bilious Fever, generated by the same causes?"—To both of these questions the Doctor gives a decided negative.

*A Treatise on the Autumnal Endemial Epidemic of Tropical Climates, vulgarly called the Yellow Fever, &c.* By J. B. DAVIDGE, M.D. Baltimore. 8vo. 65 pp. 1798. Pechin.

NOTWITHSTANDING the inelegant and rather obscure manner of writing which pervades this treatise, the author evinces no inconsiderable share of sagacity, learning, and judicious reflection. When by habits of composition he shall have attained a proper degree of purity and perspicuity of language, we doubt not he will produce something at once creditable to himself, and useful to mankind.



*Treatise on the Yellow Fever; shewing its Origin, Cure, and Prevention.*  
By JOSEPH BROWNE. New York. 8vo. 31 pp. 1798. Argus-Office.

THIS author is one of those who undertake to analyse and indicate the precise state of the atmosphere necessary to produce the Yellow Fever, with other diseases of a similar nature and type. His general principle is, that this fever is produced by heat and a deficiency of oxygenous air, or, as he terms it, "*animal vital air*;" or a surcharge of azotic, or "*vegetable vital air*." He considers the atmosphere as being principally a chemical compound of these two airs, and "when any portion of atmospheric air comes in contact with any substance that has a greater affinity with either of its component parts, than these parts have for each other, a decomposition of this portion takes place, and a new union is formed."

*Proceedings of the College of Physicians of Philadelphia, relative to the Prevention of the Introduction and Spreading of Contagious Diseases.*  
PHILADELPHIA. 8vo. 37 pp. 1798. Dobson.

THIS little pamphlet comprises all the proceedings of the Collège, in respect to the importation of diseases, from Aug. 1793 to Aug. 1797, in a very convenient form; and moreover, exhibits the most essential parts of the various medical discussions which have taken place on this subject, since the first mentioned period, when the Yellow Fever broke out in Philadelphia.

*An Inaugural Dissertation on Cynanche Trachealis, commonly called Croup, or Hives.* By JOHN ARCHER, Junr. Philadelphia. 8vo. 46 pp. 1798. Way and Groff.

THE discovery of a remedy for so violent a disease, certainly merits to be circulated in the medical world, by the earliest and most extensive channels of communication. The author contends that the seneka root does not operate a cure, merely from its emetic and diaphoretic properties, as he has in some instances seen it produce a complete cure, without having had any effect as an emetic, diaphoretic, or cathartic, "Does it not then (he asks) cure cynanche trachealis chiefly by acting as a local stimulant?"—"I would not," he adds, "give an ounce of seneka as a chance in the cure of croup, for all the *emetic tartar*, *mercury*, and *cantharides* in the United States."

As we have already, under the head '*Medical and Physical Intelligence*,' p. 83, given a particular account of Dr. Archer's method of treating this malignant disease, we refer the reader to that useful and practical information.

#### POPULAR OR DOMESTIC MEDICINE.

*Du Régime Diététique, &c. "Of Dietetic Regimen in the cure of Diseases."*  
By C. J. TISSOT. Strasbourg. Koenig.

THIS treatise is divided into three principal sections, in each of which are to be found a number of sound and practical remarks on the most efficacious and least complicated methods of preserving health: in the first, the venerable and celebrated author has classed the usual articles of food and drink, according to their comparative salubrity: in the second, he lays down general rules

rules of diet, in respect to the temperament, sex, habit, passions, and other circumstances of the patient, the climate, season, &c.: and in the third section the causes of those diseases, to which the dietetic rules chiefly apply, are traced and ascertained with great learning and judgment.

*Traité sur la Manière d'élever sainement les Enfants, &c.* "A Treatise on the method of rearing healthy children; founded on medical and philosophical principles." By I. P. FRANK, Counsellor of State to the Emperor of Germany, Professor of Chemistry at Vienna, &c. Translated from the German, by M. BOEHRER, Physician, at Paris.

This may be considered a valuable accession to the various treatises lately published, in England and Germany, on the important subject of physical education. It is a truly *philosophic*, benevolent, and spirited attempt to overcome and eradicate old-rooted prejudices. Although the author does not always condescend to present his readers with the most easy and familiar illustrations of the subjects in question, we must nevertheless do him the justice to say, that in our opinion his treatise is not inferior in real merit and utility to the classical productions of UNZER, HUFELAND, CAMPE, CLAUDIUS, WURZER, &c.

*Ueber die Erziehung und Behandlung der Kinder, &c.* On the Education and Management of Children, in the first years of their Life. A Manual for those Mothers who are concerned in the health of their Offspring, &c. By Dr. C. A. STRUVE. 8vo. 286 pp. Hanover. Hahn.

In this popular treatise, the Author suggests many practical rules for the proper treatment of children, in the state of infancy. He takes a comprehensive view of all the exercises of children tending to promote their health; and as the style of Dr. Struve is throughout clear and instructive, and his work often entertaining, by the familiar and striking illustrations with which it is interspersed, readers desirous of useful information, and particularly mothers, will be highly gratified in perusing this excellent little treatise.

To render this performance in every respect worthy of the patronage of the guardians of youth, the industrious author has not only laid down general precepts for the most rational treatment of children, in a physical respect, but he has likewise with great accuracy pointed out the exceptions from these general rules, according to their different constitution, temperaments, and other circumstances. Lastly, the cases in which the advice of a physician, or other medical assistance, becomes necessary, are fairly stated; and in a second appendix, the amusements most conducive to the health of children are critically examined and ascertained.

#### THE VETERINARY ART.

*Le parfait Bouvier, &c.* The complete Herdsman. By BOUTROLLE. 12mo. Paris. Huzard.

This is a new edition, with considerable improvements, of a very useful and well written work on the management of cattle; their age; their maladies; and the best methods of cure. To the present edition are added, two small treatises, of considerable merit, on sheep and hogs, together with some new medicines for horses.

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These Essays possess considerable merit, on account of the sound reasoning, as well as the pertinent observations and experiments in which they abound. They well deserve to be translated. Our readers will be able, in some degree, to judge of their value from a general specification of their contents. 1. On the pernicious tendency of tinned copper vessels, used for culinary purposes. 2. On the necessity of keeping such vessels thoroughly clean; and the danger to families and to society at large, from the neglect of this precautionary duty. 3. Remarks on the preparation of the dulcified spirit of nitre. 4. An analysis of the production obtained by the decomposition of Sal-ammoniac. 5. Of the preparation of vitriolic æther, and the anodyne liquor of Hoffman. 6. An analytical account of the dulcified spirit of vitriol (*oleum vini*.) 7. An expeditious process of preparing phlogisticated alkali. 8. An historico-chemical essay on the former police of the City of Milan, with respect to the tan-works there established. 9. On the distilled oil of tartar. 10. A new process of preparing the kermes mineral. 11. On the properties of the oil of laurel, and its affinity to alcohol, æther, &c. 12. An improved Papin's digester, adapted to domestic and pharmaceutical uses; and, 13. An account of a remarkable stone, of an almost spherical shape, measuring three inches nine lines in diameter, and weighing thirty-one ounces, found in the stomach of a horse, that died suddenly; and which concretion, from the imperfect analysis given by the author, we only learn, consisted of a great proportion of earth and oil.

Upon

Upon the whole, this collection is tolerably well written, and contains much interesting matter; but we regret that it is not so instructive as such a work might have been, had the author possessed a more accurate acquaintance with chemistry.

*Recueil des Actes de la Société de Santé de Lyon, &c. The Transactions of the Society of Health at Lyons, from the first to the fifth year of the French Republic; or, Memoirs and Observations on different subjects of Surgery, Medicine, and Natural History. (5 liv. 10 sols) Paris. Perisse.*

This collection, besides the light it throws on the general practice of medicine, contains a number of novel observations in that extensive science, as well as new facts relative to the animal economy, and Natural History. There are annexed, two posthumous works of the celebrated Lecat, and Observations on Surgery by David of Rouen.

\*\*\* Want of room obliges us to defer the Review of the following new books until the next Number.

Memoirs of the Yellow Fever, which prevailed in Philadelphia and other Parts of the United States of America, in the summer and autumn of 1798: by WILLIAM CURRIE, S. C. M. P. 8vo. 144 pp. Philadelphia. Dobson. 1798.

An outline of the history and cure of the fever, epidemic and contagious, more expressly the contagious fever of jails, ships, and hospitals, the concentrated endemic, vulgarly called the yellow fever of the West Indies; to which is added, an explanation of the principles of military discipline and œconomy, with a scheme of medical arrangement for armies, by ROBERT JACKSON, M. D. 8vo. 396 pp. Edinburgh. Mundell, 1789.

An account of the Plague which raged at Moscow, in 1771; by CHARLES DE MARTENS, M. D. Translated from the French, with notes, 8vo. 122 pp. London. Rivington, 1799.

A new Inquiry into the suspension of vital action, in cases of Drowning and Suffocation. The third edition. To which are now added, A Preservative Plan, or Hints for the preservation of persons exposed to those Accidents which suddenly suspend or extinguish vital Action: by A. FOTHERGILL, M. D. F. R. S. 8vo. 189 pp. and 43. price 4s. London. Rivington. N. B. The "*Preservative Plan*," now first published, may be had separately, price 1s. 6d.

## MONTHLY REPORTS OF DISEASES.

*The diseases admitted as in and out Patients at the Westminster Hospital, between Jan. 20, and Feb. 20, 1799.*

ACUTE DISEASES.							
Bilious Fever	-	-	4	Cephalæa	-	-	2
Typhus	-	-	2	Chronic Rheumatism	-	-	7
Pneumonia	-	-	3	Colic	-	-	2
Acute Rheumatism	-	-	2	Diarrhœa	-	-	4
				Dyspepsia	-	-	2
CHRONIC DISEASES.				Dysuria	-	-	2
Amenorrhœa	-	-	2	Enterodynia	-	-	2
Anasarca	-	-	3	Hooping Cough	-	-	4
Ascites	-	-	2	Hysteria	-	-	1
Asthenia	-	-	4	Hydrocephalus	-	-	1
Catarrh	-	-	3	Hydrops-ovari	-	-	1

Hydroq.

*General Remarks on the prevailing Diseases in London.*

III

Hydrothorax	-	-	-	1	Struma	-	-	-	2
Impetigo	-	-	-	2	Worms	-	-	-	2
Paralysis	-	-	-	1	PERIODIC DISEASES.				
Phthisis	-	-	-	4	Intermittents	-	-	-	2
Pleurodynia	-	-	-	1					

*Account of Diseases in an Eastern District of London, from the 20th of January to the 20th of February, 1799.*

ACUTE DISEASES.					Fluor Albus	-	-	-	3
Typhus Mitior	-	-	-	2	Enterodynia	-	-	-	2
Pleurify	-	-	-	4	Diarrhœa	-	-	-	4
Peripneumony	-	-	-	5	Dyspepsia	-	-	-	6
Peripneumonia-notha	-	-	-	12	Obstipatio	-	-	-	3
Small-pox	-	-	-	6	Gastrodynia	-	-	-	2
Acute Rheumatism	-	-	-	3	Colica Pictonum	-	-	-	1
CHRONIC DISEASES.					Dysuria	-	-	-	3
Dyspnœa	-	-	-	15	Hæmorrhoids	-	-	-	1
Cough	-	-	-	25	Hernia	-	-	-	1
Cough and Dyspnœa	-	-	-	17	Jaundice	-	-	-	2
Hoarseness	-	-	-	6	Erysipelas	-	-	-	1
Phthisis Pulmonalis	-	-	-	4	Paralysis	-	-	-	2
Hæmoptoe	-	-	-	3	Hypochondriasis	-	-	-	4
Ascites	-	-	-	1	Chronic Rheumatism	-	-	-	20
Hydrops Pectoris	-	-	-	3	PUERPERAL DISEASES.				
Anasarca	-	-	-	2	Ephamera	-	-	-	3
Cephalalgia	-	-	-	5	Peritonitis	-	-	-	1
Vertigo	-	-	-	2	Menorrhagia Lochialis	-	-	-	2
Ophthalmia	-	-	-	3	INFANTILE DISEASES.				
Epistaxis	-	-	-	1	Aphthæ	-	-	-	3
Menorrhagia Difficilis	-	-	-	3	Ophthalmia	-	-	-	2
Amenorrhœa	-	-	-	3	Herpetic Eruptions	-	-	-	1
Chlorosis	-	-	-	4	Vermes	-	-	-	2

The severe degree and long continuance of cold, has been productive of different diseases affecting the pulmonary system.

Coughs, dyspnœa, catarrh, and peripneumony, have prevailed in an uncommon degree. The last of these diseases, particularly that species of it which is called peripneumonia-notha has been severely felt by many persons in the decline of life; and to a great number it has proved fatal.

This disease sometimes approaches in a very insidious manner; and in those patients who have long been subject to catarrhal affections it does not excite much alarm, and on that account is neglected, till it assume a formidable aspect. In addition to the common symptoms of catarrh, frequently a greater or less degree of permanent inflammation serves to characterise the disease.

A sense of weight about the præcordia, with a difficulty of breathing, first announces the approach of this disease; respiration is performed rather with *difficulty* than with *pain*; or if pain is occasioned, it is rather of the obtuse than of the acute kind. The cough at the beginning is dry and hard; but afterwards a quantity of mucus, of various colour and consistence, is thrown up. A continuance of this expectoration with an abatement of other symptoms forms a favourable prognosis, respecting the termination of the disease. The pulse is frequently weak and irregular. In some instances, considerable pain is felt in the head; a bloated

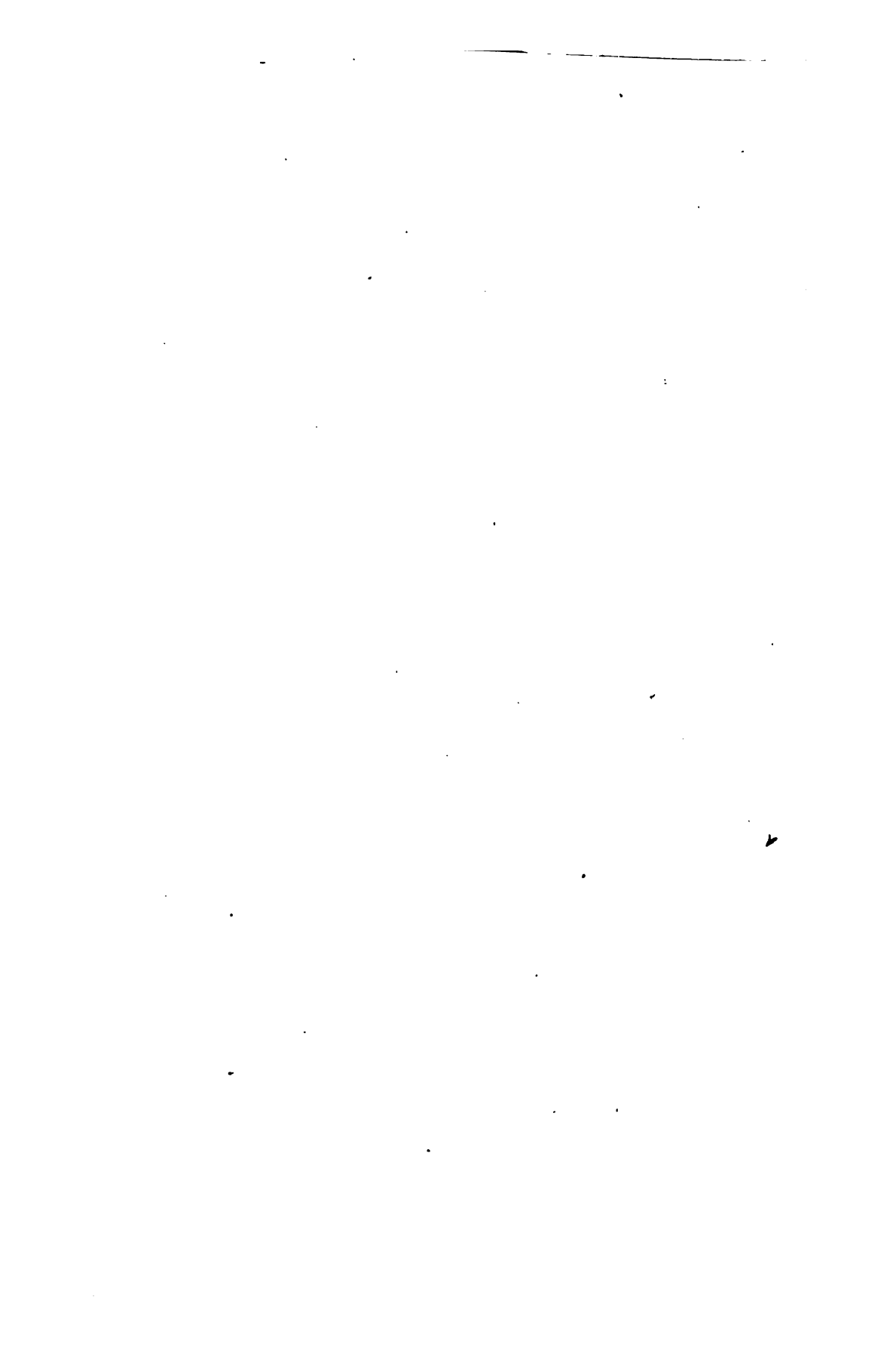
112 *General Remarks on the prevailing Diseases in London.*

bloated countenance, and livid appearance about the cheeks and lips, indicate a difficult return of blood from the head. In the early stage of this disease, antimonial preparations are more proper than those expectorants which are more heating and stimulating: and when accompanied with mild diluting drink, they promote a gentle diaphoresis. Blisters often afford an alleviation of symptoms, especially when pain in the side, or in any part of the chest, becomes urgent. In one of the patients referred to in the foregoing list, this symptom was so urgent as to render it necessary to take away a few ounces of blood, by which means, together with the application of a blister to the part affected, considerable relief was obtained. In advanced stages of the disease, the different preparations of squills, and sometimes the lac ammoniacum, prove very useful expectorants, and promote a favourable termination of the disease.

*List of Diseases from the 1st of January to the 10th of February, 1799: being the Result of the public and private Practice of a Physician at the West End of London.*

ACUTE OR FEBRILE DISEASES.				
Catarrh	- - -	33	Dyspepsia	- - - 15
Peritoneal Inflammation	- - -	1	Gastrodynia	- - - 8
Acute Rheumatism	- - -	29	Hæmorrhoids	- - - 2
Ophthalmia	- - -	4	Enterodynia	- - - 10
Inflammatory Sore-throat	- - -	4	Diarrhœa	- - - 10
Ulcerated, or speckly Sore-throat	- - -	6	Colica Pictonum	- - - 2
Scarlatina Anginosa	- - -	5	Hernia	- - - 2
Measles	- - -	3	Gravel	- - - 3
Small-pox	- - -	4	Eurefis	- - - 2
Whooping-cough	- - -	7	Hæmaturia	- - - 1
Malignant Fever	- - -	5	Ischuria	- - - 4
Slow Fever	- - -	4	Menorrhagia	- - - 5
Hæmica	- - -	3	Chlorosis and Amenorrhœa	- - - 5
Child-bed and Milk Fever	- - -	4	Fluor Albus	- - - 2
Acute Diseases of Infants	- - -	12	Scirrhus Uteri	- - - 1
Quotidian	- - -	2	Scirrhus Hepatis	- - - 2
CHRONIC DISEASES.			Scrophula	- - - 8
Cough and Dyspnœa	- - -	86	Contractura	- - - 1
Pulmonary Consumption	- - -	17	Tubæ Mesenterica	- - - 2
Spitting of Blood	- - -	5	Worms	- - - 6
Epistaxis	- - -	2	Dentition	- - - 3
Chronic Rheumatism	- - -	6	Thrush	- - - 4
Rheumatic Tooth-ach	- - -	4	Papulous Eruptions on the Skin	3
Sciatica	- - -	3	Leprosy	- - - 1
Dropsy	- - -	7	Scaly Tetter	- - - 3
Asthma	- - -	19	Prurigo	- - - 1
Cephalæa and Vertigo	- - -	17	Itch	- - - 4
Syncope	- - -	1	Scalded Head	- - - 6
Palsy	- - -	6	Ecthyma	- - - 3
Chorea Sancti Viti	- - -	2	Impetigo	- - - 1
Epilepsy	- - -	1	Shingles	- - - 1
Hysteria	- - -	2	Pemphigus Infantilis	- - - 1
Palpitatio	- - -	3	Erythema	- - - 2
Hydrocephalus	- - -	1	Gutta Serena	- - - 2

*N. B. Communications should come to hand as early as possible, before the 12th of the Month.*





*Treatise on the Yellow Fever; shewing its Origin, Cure, and Prevention.*  
By JOSEPH BROWNE. New York. 8vo. 31 pp. 1798. Argus-Office.

THIS author is one of those who undertake to analyse and indicate the precise state of the atmosphere necessary to produce the Yellow Fever, with other diseases of a similar nature and type. His general principle is, that this fever is produced by heat and a deficiency of oxygenous air, or, as he terms it, "*animal vital air*;" or a surcharge of azotic, or "*vegetable vital air*." He considers the atmosphere as being principally a chemical compound of these two airs, and "when any portion of atmospheric air comes in contact with any substance that has a greater affinity with either of its component parts, than these parts have for each other, a decomposition of this portion takes place, and a new union is formed."

*Proceedings of the College of Physicians of Philadelphia, relative to the Prevention of the Introduction and Spreading of Contagious Diseases.*  
PHILADELPHIA. 8vo. 37 pp. 1798. Dobson.

THIS little pamphlet comprises all the proceedings of the Collège, in respect to the importation of diseases, from Aug. 1793 to Aug. 1797, in a very convenient form; and moreover, exhibits the most essential parts of the various medical discussions which have taken place on this subject, since the first mentioned period, when the Yellow Fever broke out in Philadelphia.

*An Inaugural Dissertation on Cynanche Trachealis, commonly called Croup, or Hives.* By JOHN ARCHER, Junr. Philadelphia. 8vo. 46 pp. 1798, Way and Groff.

THE discovery of a remedy for so violent a disease, certainly merits to be circulated in the medical world, by the earliest and most extensive channels of communication. The author contends that the seneka root does not operate a cure, merely from its emetic and diaphoretic properties, as he has in some instances seen it produce a complete cure, without having had any effect as an emetic, diaphoretic, or cathartic, "Does it not then (he asks) cure cynanche trachealis chiefly by acting as a local stimulant?"—"I would not," he adds, "give an ounce of seneka as a chance in the cure of croup, for all the *emetic tartar, mercury, and cantbarides* in the United States."

As we have already, under the head '*Medical and Physical Intelligence*,' p. 83, given a particular account of Dr. Archer's method of treating this malignant disease, we refer the reader to that useful and practical information.

#### POPULAR OR DOMESTIC MEDICINE.

*Du Régime Diététique, &c. "Of Dietetic Regimen in the cure of Diseases."*  
By C. J. TISSOT. Straßbourg. Koenig.

THIS treatise is divided into three principal sections, in each of which are to be found a number of sound and practical remarks on the most efficacious and least complicated methods of preserving health: in the first, the venerable and celebrated author has classed the usual articles of food and drink, according to their comparative salubrity: in the second, he lays down general rules

rules of diet, in respect to the temperament, sex, habit, passions, and other circumstances of the patient, the climate, season, &c.: and in the third section the causes of those diseases, to which the dietetic rules chiefly apply, are traced and ascertained with great learning and judgment.

*Traité sur la Manière d'élever sainement les Enfants, &c.* "A Treatise on the method of rearing healthy children; founded on medical and philosophical principles." By I. P. FRANK, Counsellor of State to the Emperor of Germany, Professor of Chemistry at Vienna, &c. Translated from the German, by M. BOEHRER, Physician, at Paris.

This may be considered a valuable accession to the various treatises lately published, in England and Germany, on the important subject of physical education. It is a truly *philosophic*, benevolent, and spirited attempt to overcome and eradicate old-rooted prejudices. Although the author does not always condescend to present his readers with the most easy and familiar illustrations of the subjects in question, we must nevertheless do him the justice to say, that in our opinion his treatise is not inferior in real merit and utility to the classical productions of UNZER, HUFELAND, CAMPE, CLAUDIUS, WURZER, &c.

*Ueber die Erziehung und Behandlung der Kinder, &c. On the Education and Management of Children, in the first years of their Life. A Manual for those Mothers who are concerned in the health of their Offspring, &c.* By Dr. C. A. STRUVE. 8vo. 286 pp. Hanover. Hahn.

In this popular treatise, the Author suggests many practical rules for the proper treatment of children, in the state of infancy. He takes a comprehensive view of all the exercises of children tending to promote their health; and as the style of Dr. Struve is throughout clear and instructive, and his work often entertaining, by the familiar and striking illustrations with which it is interspersed, readers desirous of useful information, and particularly mothers, will be highly gratified in perusing this excellent little treatise.

To render this performance in every respect worthy of the patronage of the guardians of youth, the industrious author has not only laid down general precepts for the most rational treatment of children, in a physical respect, but he has likewise with great accuracy pointed out the exceptions from these general rules, according to their different constitution, temperaments, and other circumstances. Lastly, the cases in which the advice of a physician, or other medical assistance, becomes necessary, are fairly stated; and in a second appendix, the amusements most conducive to the health of children are critically examined and ascertained.

#### THE VETERINARY ART.

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This is a new edition, with considerable improvements, of a very useful and well written work on the management of cattle; their age; their maladies; and the best methods of cure. To the present edition are added, two small treatises, of considerable merit, on sheep and hogs, together with some new medicines for horses.

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108 *Rot in Sheep*—*Mr. Horsfield*—*Cit. Parmentier and Deyeux*.

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*Memoires*

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This work also offers a *theory of fire*, altogether new, founded on an analysis of its principal existence of nature; its influence on bodies; the production of colour, combustion, or taste, according to their different states of combination. The Author farther endeavours to apply the general principles of physics to the purpose of explaining the phenomena occurring in living bodies, as well as the origin and formation of minerals.

*Chemische und Pharmaceutische Abhandlungen, &c. "Chemical and Pharmaceutical Essays, partly relative to medical jurisprudence, with a Treatise on Natural History. Translated from the Italian, and accompanied with Remarks: by I. A. SCHMIDT, M. D. 8vo. 264 pp. with two plates, Leipzig, Schwickert.*

These Essays possess considerable merit, on account of the sound reasoning, as well as the pertinent observations and experiments in which they abound. They well deserve to be translated. Our readers will be able, in some degree, to judge of their value from a general specification of their contents. 1. On the pernicious tendency of tinned copper vessels, used for culinary purposes. 2. On the necessity of keeping such vessels thoroughly clean; and the danger to families and to society at large, from the neglect of this precautionary duty. 3. Remarks on the preparation of the dulcified spirit of nitre. 4. An analysis of the production obtained by the decomposition of Sal-ammoniac. 5. Of the preparation of vitriolic æther, and the anodyne liquor of Hoffman. 6. An analytical account of the dulcified spirit of vitriol (*oleum vini*.) 7. An expeditious process of preparing phlogisticated alkali. 8. An historico-chemical essay on the former police of the City of Milan, with respect to the tan-works there established. 9. On the distilled oil of tartar. 10. A new process of preparing the kermes mineral. 11. On the properties of the oil of laurel, and its affinity to alcohol, æther, &c. 12. An improved Papin's digester, adapted to domestic and pharmaceutical uses; and, 13. An account of a remarkable stone, of an almost spherical shape, measuring three inches nine lines in diameter, and weighing thirty-one ounces, found in the stomach of a horse, that died suddenly; and which concretion, from the imperfect analysis given by the author, we only learn, consisted of a great proportion of earth and oil.

Upon

Upon the whole, this collection is tolerably well written, and contains much interesting matter; but we regret that it is not so instructive as such a work might have been, had the author possessed a more accurate acquaintance with chemistry.

*Recueil des Actes de la Société de Santé de Lyon, &c. The Transactions of the Society of Health at Lyons, from the first to the fifth year of the French Republic; or, Memoirs and Observations on different subjects of Surgery, Medicine, and Natural History.* (5 liv. 10 fols) Paris. Perisse.

This collection, besides the light it throws on the general practice of medicine, contains a number of novel observations in that extensive science, as well as new facts relative to the animal economy, and Natural History. There are annexed, two posthumous works of the celebrated Lecat, and Observations on Surgery by David of Rouen.

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\*.\* Want of room obliges us to defer the Review of the following new books until the next Number.

Memoirs of the Yellow Fever, which prevailed in Philadelphia and other Parts of the United States of America, in the summer and autumn of 1793: by WILLIAM CURRIE, S. C. M. P. 8vo. 144 pp. Philadelphia. Dobson. 1798.

An outline of the history and cure of the fever, epidemic and contagious, more expressly the contagious fever of jails, ships, and hospitals, the concentrated endemic, vulgarly called the yellow fever of the West Indies; to which is added, an explanation of the principles of military discipline and œconomy, with a scheme of medical arrangement for armies, by ROBERT JACKSON, M. D. 8vo. 396 pp. Edinburgh. Mundell, 1799.

An account of the Plague which raged at Moscow, in 1771; by CHARLES DE MERTENS, M. D. Translated from the French, with notes, 8vo. 122 pp. London. Rivington, 1799.

A new Inquiry into the suspension of vital action, in cases of Drowning and Suffocation. The third edition. To which are now added, A Preservative Plan, or Hints for the preservation of persons exposed to those Accidents which suddenly suspend or extinguish vital Action: by A. FOTHERGILL, M. D. F. R. S. 8vo. 189 pp. and 43. price 4s. London. Rivington. N. B. The "*Preservative Plan*," now first published, may be had separately, price 1s. 6d.

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## MONTHLY REPORTS OF DISEASES.

*The diseases admitted as in and out Patients at the Westminster Hospital, between Jan. 20, and Feb. 20, 1799.*

ACUTE DISEASES.							
Bilious Fever	-	-	-	4	Cephalæa	-	2
Typhus	-	-	-	2	Chronic Rheumatism	-	7
Pneumonia	-	-	-	3	Colic	-	2
Acute Rheumatism	-	-	-	2	Diarrhœa	-	4
CHRONIC DISEASES.					Dyspepsia	-	2
Amenorrhœa	-	-	-	2	Dysuria	-	2
Anasarca	-	-	-	3	Enterodynia	-	2
Ascites	-	-	-	2	Hooping Cough	-	4
Asthénia	-	-	-	4	Hysteria	-	1
Catarrh	-	-	-	3	Hydrocephalus	-	1
					Hydrops-ovari	-	1
							Hydroq.

*General Remarks on the prevailing Diseases in London.* III

Hydrothorax	-	-	-	1	Struma	-	-	-	-	2
Impetigo	-	-	-	2	Worms	-	-	-	-	2
Paralysis	-	-	-	1	PERIODIC DISEASES.					
Phthisis	-	-	-	4	Intermittents	-	-	-	-	2
Pleurodynia	-	-	-	1						

*Account of Diseases in an Eastern District of London, from the 20th of January to the 20th of February, 1799.*

ACUTE DISEASES.										
Typhus Mitior	-	-	-	2	Fluor Albus	-	-	-	-	3
Pleurisy	-	-	-	4	Enterodynia	-	-	-	-	2
Peripneumony	-	-	-	5	Diarrhœa	-	-	-	-	4
Peripneumonia-notha	-	-	-	12	Dyspepsia	-	-	-	-	6
Small-pox	-	-	-	6	Obstipatio	-	-	-	-	3
Acute Rheumatism	-	-	-	3	Gastrodynia	-	-	-	-	2
CHRONIC DISEASES.										
Dyspnœa	-	-	-	15	Colica Pictonum	-	-	-	-	1
Cough	-	-	-	25	Dysuria	-	-	-	-	3
Cough and Dyspnœa	-	-	-	17	Hæmorrhoids	-	-	-	-	1
Hoarseness	-	-	-	6	Hernia	-	-	-	-	1
Phthisis Pulmonalis	-	-	-	4	Jaundice	-	-	-	-	2
Hæmoptoe	-	-	-	3	Erysipelas	-	-	-	-	1
Ascites	-	-	-	1	Paralysis	-	-	-	-	2
Hydrops Pectoris	-	-	-	3	Hypochondriasis	-	-	-	-	4
Anasarca	-	-	-	2	Chronic Rheumatism	-	-	-	-	20
Cephalalgia	-	-	-	5	PUERPERAL DISEASES.					
Vertigo	-	-	-	2	Ephemeræ	-	-	-	-	3
Ophthalmia	-	-	-	3	Peritonitis	-	-	-	-	1
Epistaxis	-	-	-	1	Menorrhagia Lochialis	-	-	-	-	2
Menorrhagia Difficilis	-	-	-	3	INFANTILE DISEASES.					
Amenorrhœa	-	-	-	3	Aphthæ	-	-	-	-	3
Chlorosis	-	-	-	4	Ophthalmia	-	-	-	-	2
					Herpetic Eruptions	-	-	-	-	1
					Vermes	-	-	-	-	2

The severe degree and long continuance of cold, has been productive of different diseases affecting the pulmonary system.

Coughs, dyspnœa, catarrh, and peripneumony, have prevailed in an uncommon degree. The last of these diseases, particularly that species of it which is called peripneumonia-notha has been severely felt by many persons in the decline of life; and to a great number it has proved fatal.

This disease sometimes approaches in a very insidious manner; and in those patients who have long been subject to catarrhal affections it does not excite much alarm, and on that account is neglected, till it assume a formidable aspect. In addition to the common symptoms of catarrh, frequently a greater or less degree of permanent inflammation serves to characterise the disease.

A sense of weight about the præcordia, with a difficulty of breathing, first announces the approach of this disease; respiration is performed rather with *difficulty* than with *pain*; or if pain is occasioned, it is rather of the obtuse than of the acute kind. The cough at the beginning is dry and hard; but afterwards a quantity of mucus, of various colour and consistence, is thrown up. A continuance of this expectoration with an abatement of other symptoms forms a favourable prognosis, respecting the termination of the disease. The pulse is frequently weak and irregular. In some instances, considerable pain is felt in the head; a bloated

an instance of its proving fatal. On the other hand, I had experienced the small-pox in my own family, both natural and inoculated, to terminate mortally. On these considerations, and admitting it should not have the desired effect of a preventive against the small-pox, it would still leave my child in the same situation as others; but, if it really were a preservative, as it appears to be in numerous instances, the advantage would be incalculable, and, if encouraged, might in the end even annihilate that dreadful scourge of mankind, the small-pox.

To encourage others, I transmit my observations, made in the progress of the disorder, accompanied with a drawing, exhibiting the various appearances of the pustules.

On Monday, 19th February, 1799, the infection was given by Doctor WOODVILLE in the presence of Dr. WILLAN, by two incisions, but no material change appeared till the 21st, when the inflammation was increased, and a rising might be felt at each puncture, though not visible, as given in the plate at No. 1.

On the fourth day the pustules at the punctures were very distinct, and the inflammation spread, as at No. 2.

On the sixth day the pustules had run together, with a small brown scab depressed in the middle over each incision, surrounded with a thin scale-like edge, too difficult to be represented by the engraver; the pustules were full of a whey-like matter, as at No. 3.

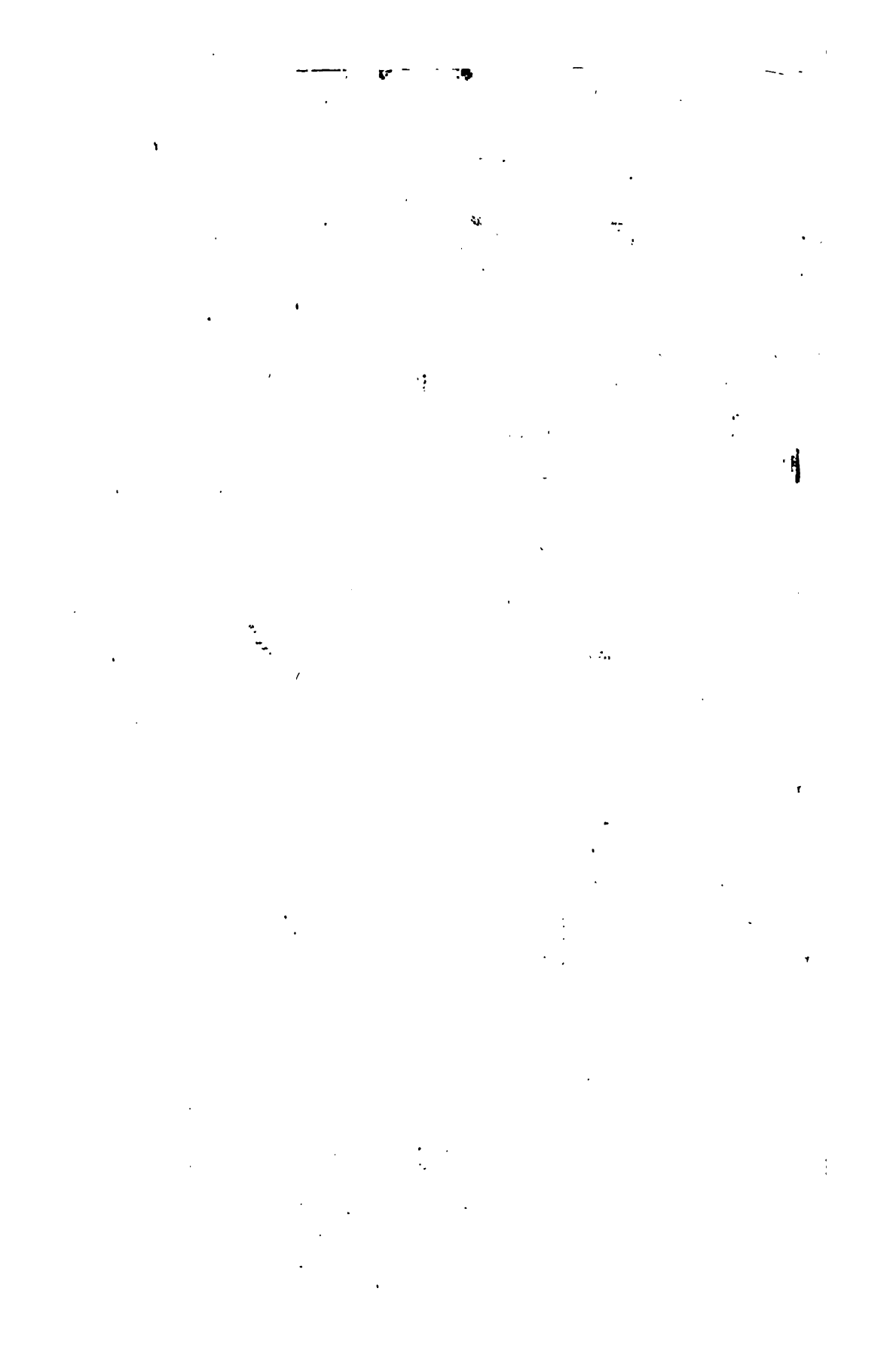
On the seventh day one of the scabs was accidentally rubbed off, and the pustules became a little browner, as at No. 4.

On the ninth day it was one irregular pustule; the scabs also became one, with a faint inflamed circle, detached, as No. 5.

On the 2d of March, the eleventh day, that inflammation had entirely disappeared, being united; and the scab had become much darker and enlarged, with the scaley edge before remarked; the circumference of the scab less regular, and almost impossible to be represented by the engraver. A small pustule was observed, quite white, close to the edge of the large one, and which soon so united with it, that it gave its edge more irregularity, as No. 6.

On the thirteenth day another pustule came out at a greater distance, transparent, white, and round, as No. 7.

On the fourteenth day another pustule, similar to the former, appeared on the opposite side of the scab. The former had become more whey-like, and the skin a little brown; and, while making the drawing that day, the pustule which I observed on the thirteenth day broke, and a clear transparent fluid oozed out, and stood on the pustule like a drop of dew, in size rather bigger than a common pin's head. I also found the core or hardness which







which I had before observed under the fore was enlarged, and the inflammation much increased both in colour and extent, as No. 8.

On the seventeenth day the pustule that came out on the thirteenth, and broke on the fourteenth day, was quite dry and brown; the others which had run into the large one, were now more distinct than at any time before; as each separate scab, of which there were five, although only three pustules were observed, rose above the others, and the whole had quite a polish. The scab of the distinct pustule came off about ten or eleven days after its first appearance. The core, on the day after its increased size was observed, was equally perceptible in its decrease, and both this and the inflammation gradually abated; the latter becoming rather livid, like a fresh healed wound when cool. The cuticle all over it seemed about to peel off, being cracked, and the white edges giving somewhat the appearance of whitening or flour slightly wiped off, as No. 9.

The middle, where the first scabs were formed, was dented in, and of a very dark brown colour, almost black, which gradually spread over the whole, and the polish went off, the scab drying, contracted, and became dull.

On the 18th of March the whole scab was separating all round the edges, and the child was inoculated with variolous matter for the common small-pox, which, on this day, (March 21) is evidently dying away like a simple scratch.

During the whole time the child never exhibited any particular symptoms of indisposition, and had so little fever, that it was hardly, if at all, perceptible; he, however, seemed by the motion of his arm, to be sensible of a soreness under it; but neither that nor the eruption affected him so much as to render him cross or peevish, although he cut three teeth during the progress of the disorder;—he went entirely alone before he was eleven months and a half old.

*Rosamond Street, Clerkenwell,*

*21st March 1799.*

\*\*\* *The preceding communication on so interesting a subject, we consider as peculiarly valuable; as Mr. WALKER not only shows a mind sufficiently enlightened to give a fair trial to a new method of conquering one of the most dreadful scourges to mankind, but, from his professional abilities, also enables us to exhibit the progressive appearances of the cow-pox. We regret, however, that on account of the very late arrival of this paper, the plate alluded to cannot be prepared in time for the present Number, but it will certainly appear in the next.*

*As the following communication has been transmitted to us through such respectable channels, and contains an account of a very extraordinary circumstance, we are happy in having an opportunity of laying it before our readers, and wait with impatience for the additional information that is expected from Colonel MARTIN.*

## INTRODUCTION.

SIR J. SINCLAIR having accidentally heard of the very extraordinary method by which Col. MARTIN, in the service of the East-India Company, had cured himself of a stone in the bladder, was thence led to request the Colonel would have the goodness to send him an account of the process, which he did accordingly, in a letter, of which the following is a copy, in the words of the writer. Some apology may be made for the language, Col. Martin being a foreigner. A fuller account is soon expected, which will be communicated to the public when received.

TO SIR JOHN SINCLAIR, Bart.

Dear Sir,

I HAVE been honoured with your very kind favour of the 20th and 22d of December 1796, as also the one of the 4th of July 1797. I received them in their proper time, but I have been so much employed, that I had not a proper moment to myself, to answer them as I wished; even now, I cannot do it, being just recovered from a very severe attack of gravel, a circumstance that has not happened to me before, since I have been so fortunate as to cure myself of the stone; which cure was, and must certainly appear very extraordinary to those who do not know how I accomplished it. I have been looking for a copy of a relation of it, which I think I sent to Sir JOSEPH BANKS some time ago, but have not been able to find it, I have only found an old book of memorandums made during my illness, as I was obliged to make memorandums even of what I was eating and drinking, in order to be able to know what did or did not agree with me. This book is a kind of journal of my disorder, to copy which would be very long; but if Sir Joseph Banks has lost the paper, or the file I sent him, I will make an abstract of the process I used for my memorandums, and also send you one of the files.—I began to file the stone in the bladder in April 1782; and, as appears by a note I received from Doctor Rennet Murchison, who was at this place as surgeon to the Resident, I soon made an impression upon the stone, and brought away many small pieces, which are in my possession. One of these pieces I sent to Dr. Murchison, for his inspection.

His answer was:—

*“ Dear*

" Dear Martin, I have examined the Stone with a good microscope ; it seems to have a solid shell on the external part, but is internally of a loose texture.— From this appearance, I fancy your mechanical plan has had some effect ; but, my dear friend, do not suffer yourself to be so sanguine in your hopes, as to use your file too often, for an inflammation of the bladder might now prove fatal ; however, as the internal texture of the stone is loose, and as you have broken the hard surface on the outside, I have no doubt but you may get a great deal of it away by the cautious use of your instrument.

" Your's affectionately,

" R. MURCHISON."

JUNE 5, 1782.

This good man, Dr. Murchison, endeavoured to dissuade me from going on ; but, as I found daily the good effect of my filing, and never suffered particular pain in doing it, I persevered till the middle of October of the same year, and I think I filed on an average at the rate of at least three times in the twenty-four hours. I was at first puzzled how to bring the stone to the neck of the bladder ; but I contrived to inject warm water into the bladder, which, endeavouring to discharge, it protruded the stone to its neck ; I then introduced my file between the flesh and the stone, keeping my body inclined against a wall all the time, till, by a bad stroke, I pushed the stone from the neck of the bladder. In this case I could not proceed with filing, but I was obliged to wait till it came again to obstruct the urine, or it was brought back by injecting warm water into the bladder. Fear of inflammation I had none ; for it once happened that a spasm of the whole urethra fixed my file so firmly that I could not move it. This spasm lasted about ten minutes, and when relaxed, a great deal of blood came away, and also many small pieces of the stone. In a couple of days I could renew my filing without any pain, which convinced me that there was no fear of inflammation, and such spasms happened often without any bad consequence. I had long before made use of Mr. DAWSON'S bougies, not knowing that my disorder was the stone, but thought it to arise from stricture or caruncles at the neck of the bladder. I had also made great use of lime-water and soap, and even injected them into the bladder, when I had found out that my complaint was the stone in the bladder.

Dr. Murchison had given me for a long time salt of tartar and vitriolic acid ; which, I think, did me more hurt than good, as it had once reduced me so very low as to be near dying ; and, I think, if I had not quitted that plan, against the advice of all my friends, and of some who are now in England, particularly Mr. NATHANIEL MIDDLETON, of Stafford Place, London, who advised me to follow that course, I am convinced I should not have lived twenty days. It had reduced me so very much, that I was not able to keep myself on my legs, or even in an erect posture, without being giddy. In spite of advice, I took a large dose of tartar emetic, and voided a most

corrosive acid from my stomach. From that moment I could sleep, and keep myself on my legs, though reduced to a skeleton. After this, I brought my stomach into better order; and when well, except the pain of the stone, necessity, the mother of all invention, suggested to me the file, which effectually cured me: and I have been extremely well ever since, except about two months ago, I was attacked with a fit of the gravel, of which I am now clear; but the neck of the bladder was excoriated, which prevented me from taking my usual ride, which I otherwise do every day, and gallop about eight or ten miles before breakfast, and the same in the afternoon. Notwithstanding all these exercises, I tend to form so much acid in my stomach, that it would give me the gout if I was to omit them. I will by and by send you a better description of the means by which I cured myself, and also send you one of the files.

You may see by my bad English that I am deficient, perhaps, in expressing myself as I wished, so that I fear the explanation of my cure may not be so clear as if written by one well versed in English. I hope to be excused for any incorrectness in the style, sincerely wishing that my method might relieve others as it has done me. To every one of the faculty who wished to know what I did, I have explained it. I am convinced that all persons may cure themselves, as it requires very little address. I do not think it possible for another to operate, as none but the patient can know where it pains him, and he will naturally know when and how he can introduce the file, as he cannot do it to any purpose but when the stone is at or near the neck of the bladder. The file being so very small (not thicker than a straw), is easily introduced between the fleshy part and the stone, and the motion in filing does not extend beyond the length of about half an inch; and when he does it, he naturally will take care not to push the stone into the bladder, as he will for this reason find it necessary to raise the file against the fleshy part, and then push the file in about half an inch, taking care to avoid touching the stone; and when so far, to draw and press the file upon the stone, two motions that are performed very quickly; and as the file is made or cut in such a manner as to file only in drawing it, and pressing the file on the stone, he cannot avoid filing that part of the stone; and, by doing it often in the day and night, must at last destroy it, as I did. The pain I suffered from that complaint had made me abandon drinking any liquor but plain water, and I had been so much reduced, having at the same time some ulceration near the neck of the bladder, that I had also been obliged to lay aside the use of salt and spices in my food to avoid acidity in my urine. My food was nothing else but boiled or roasted meat, and water for my drink, taking care to keep my body open by gentle laxatives. But, as soon as the urine became clear, my stomach began to be better, and I grew more easy, and more regular in filing the stone, which I did very often in the day and night, sometimes ten

or

or twelve times in the day, and passed almost every day small pieces, till the whole came away; and, as I said above, I have been very well since; never had any pain, or return of stone or gravel till very lately. But, from the preceding complaint, my stomach suffered so much, that I am very subject to form acid; and when the acid prevails, it affects my left kidney, and occasions me to make water oftener than usual.

I have lately experienced some attacks of gout, which last about seven or nine days, and a dose of tartar emetic often cures me, with the assistance of horse-exercise. All fermented liquors, or liquors containing acidity, as also fruit, or green vegetables, do not agree with me. Animal food and water are my general food and beverage, and I have always been well during the use of them.

I have had the pleasure to receive the printed paper you have been so kind to send me. Your labours for the improvement of agriculture are very great, and I am extremely happy to learn your success. I should be more happy if I were able to contribute toward so useful a branch of science; but I fear nothing can be learned in this country; the soil is so very rich, that every thing vegetates without labour or art. On these accounts, the necessity of invention does not exist.

Excuse me, my dear sir, for so long a letter: I at first proposed a small one, in answer to yours, but I found the subject of my late indisposition has carried me so far, to make you better acquainted with the means by which I cured myself. Believe me, most sincerely,

My dear sir, your most obedient, &c.

*Lucknow, July 9, 1798.*

COL. MARTIN.

The above letter being communicated to Mr. HASTINGS, by Sir John Sinclair, he returned an answer, of which the following is an extract:—

TO SIR JOHN SINCLAIR, Bart.

Dear Sir,

*Daylesford House, Feb. 28, 1799.*

I return you many thanks for the perusal of Colonel Martin's curious letter; for curious and interesting it is, even to me, who well remember all the particulars of his case, as he has detailed it to you, and even the language in which he has delivered them. The letter from Dr. Murchison, a very sensible and able practitioner, I well remember. I mentioned the fact once to Mr. Pott, who evidently shewed, by his looks and silence, that he did not believe it.

I have the honour to be, &c.

WARREN HASTINGS.

*An Account of the chief Peculiarities of the Brunonian System.*

AT a time when every University in Europe and America, and practitioners in both Indies, are directing their attention, by encomiums or criticisms, to the *Brunonian System*; when it has begun to be adopted, and openly avowed by many popular writers in this kingdom; it may not be thought unreasonable to lay before our younger readers, a concise view of its principles and peculiarities. Though dignified by its admirers with the title of a *system*, it will be obvious to the discerning reader, that there are many chasms in it, in common with all other medical systems; and many errors, the correction of which will require much time and observation, if the fundamental principles of it should be admitted.

The circumstances attending the promulgation of Dr. BROWN's opinions, at first in Edinburgh, made the professors and established practitioners unite very generally in opposing them. They might have perceived, that the application of his system to practice, was by no means so simple and obvious, as the young students, who first embraced it, imagined; and therefore they might have opposed it from an opinion of its dangerous tendency, as well as a disapprobation of the conduct of its author. This opposition, however, in an University, which, since the death of Boerhaave, has dictated the medical opinions of Europe and America, contributed most effectually to disseminate and establish the new doctrines of Brown. The Medical Societies of Edinburgh, instituted for the discussion of theoretical and practical subjects connected with Medicine, have an almost irresistible influence over the opinions of its students. In order to defend his own dissertations in these societies, or attack those of his cotemporaries, every member must acquire the ideas and phraseology which prevail at the time; and that too at a period of life when all forcible impressions remain indelible. It must be observed, that the members who attend these societies consist almost entirely of young students, and the presidents are always elected from among them; so that their debates are never over-awed by the presence of professors or established practitioners. It is well known that the Society, called the Royal Medical Society of Edinburgh, were in the habit of discussing medical subjects, on the principles of the spasmodic, or that since called the Cullenian theory, which they had acquired from the works of Hoffman, long before the Professors themselves had relinquished the opinions of the Boerhaavian school. It is also true, that during the latter part of the life of Dr. CULLEN, the Brunonian system was adopted in all these societies, though the graduates of that University were not allowed to publish their theses upon any other principles than those taught by the Professors. The system of Brown, adopted and disseminated by at last 200  
young

young men annually, from which number the surgeons and physicians of the navy and army are generally supplied, as well as the practitioners of the East and West Indies, must necessarily in eight or ten years affect the opinions of the whole medical world. This was really the case; but persons established in the profession were somewhat shy and backward in declaring their opinions, till DARWIN professed himself to have been a Brunonian, even before he had heard of Brown's system.

The learned were ashamed to avow the opinions of PARACELSUS, before VAN HELMONT openly adopted them. This reluctance in the human mind against being led by an individual, or being the first to join an innovator, appears to arise from the unwillingness of admitting a dictator, or from the ridicule commonly thrown upon an early apostate from established opinions.

Since the publication of *Zoonomia*, the language and sentiments of Brunonianism are become common; but what is remarkable, though by no means singular, on the occasion, is, that a majority of the persons who are become converts to the doctrine, are totally unable to recollect when or how they were converted.

But it is our business to give an account of the system, rather than of the means which retarded or promoted its promulgation.

The common opinion respecting life, or the vital principle in animals and vegetables, is, that it is entirely distinct from the organization of the body in which it resides; that it is a separate, independent principle, added to the body in some early period of its existence, and which there continues unchangeable, and then leaves it at a late period, when it finds the habitation no longer tenable. Dr. Brown, on the contrary, considers life as an assemblage of actions or effects, which take place in the body, in consequence of a certain predisposition and exciting causes; and that the state or quantum of the vital principle, or energy of the system, is *perpetually varying*. Thus the abstraction of heat and food may reduce the powers of life so low, that the hot bath, or a glass of wine, would be sufficient to destroy the patient. On the other hand, a jail fever, in a few days, may so far diminish the vital energy, that a warm room, and a bottle of wine a day, may become necessary to preserve life. In the former case, the predisposition is said to be morbidly accumulated; in the latter, exhausted. This short statement includes the basis of the system; but before we proceed to develop it further, it is necessary to explain a few terms which are peculiar to the doctrine, or employed in a peculiar sense.

The degree or state of action, or vigour of the system, or energy of the vital principle, which is present at any time, is here called

EXCITEMENT.

It has been suggested, that Dr. Brown adopted this term, because Dr. Cullen



Cullen had rendered it fashionable and familiar to the profession, though he used it in a more limited acceptation. We rather suppose it was preferred on account of its implying here no particular hypothesis.

That state of the organization of the solids and fluids, which constitutes the predisposition to *Excitement*, is denoted by the term

#### EXCITABILITY:

Some of Dr. Brown's followers, who were of opinion that the *Excitability* of the system depended upon the state of the muscular fibre alone, employed the word *Irritability*, as synonymous with *Excitability*. But this is objectionable, as being founded on an opinion not generally received.

All those powers, both internal and external, such as the passions, heat, food, medicines, contagion, pain, &c. which, by acting upon the *Excitability*, produce *Excitement*, are included under the general name of

#### STIMULI.

This term is perhaps more objectionable than either of the preceding, on account of the enormous extension of its application. Stimulants and sedatives were terms that had long been received as antagonists in a medical sense. The annihilating one, and making it only a degree of the other, was a shock to medical language too great to be acquiesced in on a sudden. Yet we know, that in the language of the profession, heat and cold were formerly considered as antagonists, but now nobody doubts that they are only different degrees of heat.

The same error pervades medical language, when speaking of the exciting passions: the effects of hope are often imputed to fear, which is only a different degree of hope.

If, for the sake of avoiding the term *Stimuli*, Dr. Brown had used *Exciting Powers*, the absurdity of exciting powers producing depression, in however low a degree applied, would have appeared more objectionable than the generalization of the term. We shall soon see, that the different *degrees* or *intensities* of stimuli may often be substituted for most of the different genera and species of them, as well as those supposed *antagonists*.

Having explained the chief radical terms peculiar to this system, we shall next proceed to its developement with respect to the operation of stimuli upon the *Excitability*, in producing the various degrees of *Excitement*, upon which all health and disease are said to depend.

1. The *Excitability* of the whole body, as well as of particular parts, is by Dr. Brown supposed to be in a state of *perpetual variation*.

This variation depends upon the time and manner of application, of the internal and external stimuli employed.

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To illustrate this fundamental position, we may instance the change which takes place in the progress of life, independent of accidental circumstances. In the first days after birth, excitability of the primæ viæ is such, that a few grains of manna will act as an operative dose. During the first year, the healthy excitement of the system may be supported by a milk diet; and it argues an abuse of stimuli, if a glass of wine does not prove an excessive stimulus before the age of puberty. In advanced life it is well known, that the stimuli just mentioned are far too feeble to produce any obvious effect or excitement. If these ideas were not founded in truth, there is no obvious reason why animals and vegetables might not be immortal.

The accidental circumstances which we have just alluded to, as most commonly producing variations in the excitability, are, the internal and external stimuli above mentioned. The changes, however, depend almost entirely upon the manner of applying them. It is not the rare or casual operation of stimuli which produces any permanently important variation in the excitability, but that which, frequently and regularly repeated, changes custom into habit. This may be illustrated by referring to the effects of opium, tobacco, spirits, &c. upon persons accustomed to the use of them. We may also advert to the various states of the excitability at the commencement and during the progress of fevers; in persons properly fed and clothed; and in the same persons, when accidentally deprived of these comforts, &c. &c.

2. The degrees, intensity, or sum of stimuli, which act upon the excitability, and regulate the excitement or energy of the system, ought to be considered in respect both of force and permanency. But before we can speak of the force or intensity of the existing stimuli at any time, it will be necessary to obviate the inconsistency above alluded to, in calling those things stimuli, or exciting powers, which produce sedative or debilitating effects. If it were possible to exhibit any substance entirely void of heat, or to conceive a total absence of internal stimuli during life; and if we had terms to denote these circumstances, in various degrees of intensity, which is obviously absurd and impossible, then might we employ the terms "*power of cold*," "*directly debilitating powers*," &c. without outraging the common acceptance of terms. The author of this system has been accused of a want of precision in this respect.

No person can doubt, that an abstraction of the cheerful passions, of heat, or of necessary food, may directly and immediately produce debility. This is the debility arising from deficient stimuli, and called by Dr. Brown *Direct Debility*. But as this state of the system is found to be more susceptible of the operation of stimuli than the healthy state, it is inferred that the *excitability is accumulated*; so that *direct debility* and *accumulated excitability* are employed as equivalent terms.

When the energy of the system has been diminished, or debility produced,  
in

in consequence of the inordinate application of stimuli, as of joy, heat, voluntary motion, wine, opium, &c. this debility, as being *consequent* to *mutual excitement*, is called *indirect debility*, or *exhausted excitability*.

According to this system, health and continued vigorous action of the body depend upon a due balance or proportion between the stimuli and excitability, so that the latter may neither accumulate nor be exhausted for many hours together. It therefore follows, that all disease arises from a morbid accumulation or exhaustion of the excitability, or from direct or indirect debility. And as two different degrees of excitement cannot possibly exist in the same person simultaneously, it is impossible that two different constitutional diseases should be present at the same time.

From this short sketch of the causes of health and disease, according to this system, it will be obvious that the preservation of the former, or the cure of the latter, must principally depend on due application of stimuli.

If time and experience had reduced this to fixed rules, nothing would be wanted to the completion of the Brunonian doctrine. In order to explain this part of the subject to the younger class of our readers, we shall adduce a few instances.

If a person who had been confined for several years in a cold and dark dungeon, and fed on bread and water, were committed to our care or cure, for the state of his system could not be that of health, though no specific disease may be actually present; we should not expose his eyes to the glare of the sun, his body to the hot bath, his limbs to fatigue, or his stomach to fermented liquors. In the practice to be adopted, all are agreed; but the Brunonian explains it in this manner:—The excitability being accumulated in so inordinate a degree, the stimuli to be adopted must not exceed those usually applied to a new-born child, otherwise a fatal inflammation, or sudden death, would ensue. But if the stimuli of light, motion, and food be applied at first in very low degrees, the excitability may be gradually brought down to the common standard; and of course become capable of bearing the stimuli usually applied to healthy persons.

If, on the contrary, we found a patient who had been affected for several days with jail fever, and reduced to as great a degree of debility as could be compatible with life, the whole profession would agree in the mode of treatment; that is, in applying warmth or blisters externally, and in giving brandy, wine, spices, opium, æther, bark, &c. in appropriate doses, internally. The Brunonian justifies and explains his practice, by stating, that the excitability is so rapidly and inordinately exhausted in these fevers, that an excitement compatible with the continuance of life, and restoration of health, can alone be produced and supported by the most powerful and diffusible stimuli.

We perceive, then, that the cure of all diseases, according to this system, consists

consists in proportioning the stimuli to the degree of excitability present in the patient, till healthy excitement is restored.—As a general rule, we are advised to apply the stimuli in the inverse ratio of the excitability, in order to produce the most salutary action or excitement of the system. Dr. Brown and his adherents explain this in the following manner:—They suppose any state of the excitability, compatible with the continuance of life in the extremes, or with health in the middle of the scale, may be represented by the common numbers, from 1 to 19; and that the different degrees of stimuli which may be applied to it, to restore or preserve health, may also be represented by the same numbers in the inverted order.—Thus.

Excitability, or Predisposition.		Sum of Stimuli.		Product, or Excitement.			
Accumulation.	20	—	0	—	0	death	A B C D E F G
	19	—	1	—	19	—	
	18	—	2	—	36	—	
	17	—	3	—	51	—	
	16	—	4	—	64	—	
	15	—	5	—	75	—	
	14	—	6	—	84	—	
Health.	13	—	7	—	91	—	H I J K L M N
	12	—	8	—	96	—	
	11	—	9	—	99	—	
	10	—	10	—	100	—	
	9	—	11	—	99	—	
	8	—	12	—	96	—	
	7	—	13	—	91	—	
Exhaustion.	6	—	14	—	84	—	O P Q R S T U
	5	—	15	—	75	—	
	4	—	16	—	64	—	
	3	—	17	—	51	—	
	2	—	18	—	36	—	
	1	—	19	—	19	—	
	0	—	20	—	0	death	

From (A) to (G) includes those diseases which arise from the abstraction of necessary stimuli, as scurvy, petechiæ sine febre, &c. and points out the degree of stimulus necessary to restore health.

From (H) to (O) includes those variations which may be considered as compatible with health, while the corresponding stimuli are applied; but if inordinate or disproportionate stimuli be applied in any state of the excitement, disease may be induced.

From (P) to (V) comprises the degrees of exhausted excitability, or indi-

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rect debility, to the account of which almost the whole catalogue must be placed; for the diseases arising from accumulation often suddenly pass into those of exhaustion, in consequence of excessive stimuli.

From the above statement of this system, as far as respects the cure of diseases, it will be obvious that the doses, as well as the medicines themselves, must be regulated by the state of the excitability; and that in ascertaining this state, and proportioning the stimuli to it, is the only field in which the practitioner can exercise his skill and judgment.

For an application of these opinions to the prevention or cure of particular diseases, we presume such of our readers who deem this system worthy of their farther attention, will naturally have recourse to the author of it, in Dr. BEDDOES's edition of the "*Elements of Medicine*," 2 vols. 8vo. London, 1795; or to "*A View of the Science of Life*," by YATES and MACLEAN, 8vo. Calcutta, 1797. In these works, the errors and defects of Brown's system are pointed out, and corrected or supplied.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

*Great Smith Street, Westminster, March 8, 1799.*

AS the Medical and Physical Journal is intended to be conducted on a broad and impartial basis, I hope you will insert in your next number the following observations on a subject which I conceive to be of great importance, and which merits the most serious consideration of every medical practitioner.

Gentlemen, with the greatest respect,

I am your most obedient Servant,

JOHN FRANKS.

In the first number of your Journal, we find an article extracted from an essay written by Professor HUFELAND, of Jena, intitled "Remarks on the influence of the Brunonian system on the practice of medicine."

There are Physicians in this country who entertain the same opinion with Professor Hufeland, that Doctor BROWN's work has not a tendency to facilitate the acquisition of medical knowledge, or to improve the method of curing diseases. On the other hand, there are a very great number of medical practitioners of great respectability, who, from their own experience of its utility, have adopted a very different opinion; amongst these are Dr. BLANE, Dr. ROBERTSON, and Dr. TROTTER.

We find the same sort of unsubstantial objections now begun to be made to this system of medicine abroad, as were made to it ten years ago at home.

To

To satisfy the minds of young men who have not yet commenced their medical career, something more is necessary, in order to convince them that this doctrine is not the model they ought to take as their guide, than mere general assertions, witticisms, a reference to the difficulties of applying it in practice, and a contemptuous manner of treating the memory of the Author.

"That animal life is a forced state of existence, is a fact, says a Reviewer, which has probably been known ever since eating and drinking were in fashion."—Granted.—But has any practical application ever been made of it, we would ask? Has it not been reserved for Dr. Brown to make a practical application of this fact, and, with the assistance of a multitude of others, to establish a doctrine, which will probably be well received by the latest posterity.

Believing, as I do, the vast importance of this doctrine to individuals and to the state, from the great number of lives which have been saved this way by an application of its principles, I wish to see the whole matter fairly presented to the public, because I think the result will be, that the truth of it will be more universally acknowledged.

It may be, and no doubt is, in practice sometimes very difficult to distinguish a sthenic disease from a disease of the asthenic class; yet if this division of diseases is found to be natural, these difficulties ought not to be ascribed to the doctrine, but to the imperfect state of human knowledge.

But although it may sometimes occur in practice, that from the equivocal nature of symptoms we should be deceived; the indications of cure being applied to the case, will soon point out the error into which we have been precipitated by fallacious appearances, and will be remedied by reversing the mode of treatment; for it is not to be supposed that a prudent practitioner would immediately have recourse to the most powerful means of removing a diathesis of an uncertain nature. Those who are thoroughly acquainted with the Brunonian system, cannot act systematically wrong; and this is more perhaps than can be pleaded in behalf of any other system. Although, on our first visit to a patient, it is true that we have only to revolve in our minds such queries as these: Is this disease sthenic or asthenic? is it universal or local? next, what is its degree? yet we shall not, in every case, be able to determine these queries, so essentially necessary to be known; on the contrary, in many cases in practice, it will require the greatest exertion of judgment to form a right conclusion.

But a right conclusion must be formed, or we cannot cure the disease, and an application of our test in these cases will remove the difficulty, for "the powers that produce one class of diseases, are the remedies for the other, and *vice versa*."

Dr. Brown's system of medicine is founded on uncontroverted facts, and philosophical induction, and not like those systems which preceded it, on fanciful hypotheses; therefore, will seldom mislead us in practice. The doctrine in general is plain, simple, and easy to be comprehended. In it we observe only a few general distinctions, corresponding to the differences really found to exist. In other works of this sort, we find a great number of distinctions made between diseases not essentially differing in kind. If we are governed in our practice by ingenious theories which have no foundation in nature, cases would frequently occur, where, on account of the symptoms, contra-indications of cure would be supposed necessary. According to this work, although in many cases secondary or partial considerations may present themselves, yet the principal indications in every universal disease are the same, namely, to *stimulate* or *debilitate*, and to *apportion* our remedies to the degree of the disease, and not to stimulate on account of certain symptoms, and debilitate on account of others, or continue the practice of stimulating and debilitating alternately, until the death of the patient puts a period to our endeavours.

Our author has clearly demonstrated to us the real nature of animal life—has shown that every disease of the system is preceded by pre-disposition; that health, pre-disposition, and general disease, are similar, and not *opposite* states of the body, differing according to the *degree of excitement only*. "The excitement is every thing, ourselves nothing; for no longer excitement, no longer life." Again, "if a just degree of excitement could be constantly kept up, mankind would enjoy *eternal health*." If a certain degree of excitement is the cause of health, it necessarily follows, that the application of a less or a greater degree of this *effect* immediately places the body either below or above the healthy state; and consequently, a pre-disposition to a disease of the asthenic, or sthenic classes directly commences, and which will, sooner or later, terminate in actual disease, unless counteracted by an increase or diminution of the excitement. During the period of pre-disposition, which may be of longer or shorter date, (for the difference in the degree of the *effect* compensates for the difference of time) so little disturbance in the animal economy is noticed, that on the appearance of the symptoms of disease, it would seem as if it had suddenly invaded the human constitution, but which, this doctrine shews, is not the case. From the increase or diminution of excitement, a pre-disposition to disease is formed, and is gradually, but at the same time imperceptibly, increasing; until, as it may often happen, an occasional cause is applied, which, with the existing pre-disposition, induces diseases that have often been ascribed to a *cause* which has not evidently operated so as to induce them; the cause here alluded to is *contagion*. On this subject it may not be improper, perhaps, to offer a few remarks. A medical friend, who is an able advocate for the

Brunonian

Brunonian doctrine, has taken notice of a circumstance, which appears to demand attention; for, at first sight, it appeared to him rather to militate against it.—It is contagion. “I admire the universal doctrine of stimuli,” observes this gentleman, “nor do I find it in the least vulnerable, except in the consideration of contagion; in this respect BROWN is unsatisfactory. A reference to the general proposition is not sufficient.” He then asks, “What is contagion? a positive or negative principle? or does not fever, arising from the supposed introduction of this *unknown* power, rather depend, where there is no other evident remote cause, as cold, fear, famine, &c. upon impurity of the air? The air is a stimulus absolutely necessary to life; its stimulant degree depends upon its purity: any thing diminishing *this*, and rendering it not sufficiently stimulating, may give occasion to every circumstance of the febrile state; this idea leads me at once to disclaim the notion of a positive sedative, and to embrace the Brunonian opinion, that all diseases of direct debility arise from an abstraction of necessary stimuli.”—I have extracted these few lines from a very long letter on the subject, to shew, that the advocates for the doctrine have not given it a decided preference, without due examination.

The science of medicine has, in many instances, been improved by empirics, but this consideration is not a sufficient reason that we should act empirically on every occasion, because on a few, we are obliged to content ourselves with observing EFFECTS, without knowing in what manner those effects have been induced. We have long known, that mercury cures the venereal disease; we were obliged to remain satisfied with the fact. Now that we know, or are supposed to know, upon what principle it is, that this remedy produces its effects, substitutes that possess a less dangerous tendency, are assiduously inquired for.

It is therefore absolutely necessary that we should be in possession of some system of medicine. If Dr. Brown's system is only in the smallest degree preferable to those which have preceded it, the work deserves attention. It may have defects, but those defects ought to be considered as so many exceptions: and exceptions were never yet considered of such importance as to destroy the propriety of general principles.

The aphorisms of Brown are so intimately connected, originating from known facts and philosophical induction, that they appear to me likely to stand the test of ages; and I think that had his life been extended a few years, the healing art, before his time so mysterious, conjectural, and contradictory, would have received from his labours still further elucidation.





anginosa, in its malignant form, have been very prevalent. The latter, more especially, has proved in many instances fatal; and in those who recovered, it produced, after the cessation of the fever, anasarca, swelling of the abdomen, swelling of the lips and parotid glands, strumous ophthalmia, with an eruption of the favus, and hectic symptoms of long duration. The disease spread from London to the adjacent villages, and was almost universal in Somer's-town, during the month of February.

R. W.

ACUTE DISEASES.					
Catarrh	—	—	37	Vertigo and Syncope	— 6
Acute Rheumatism	—	—	7	Hysteria	— 3
Inflammatory Sore Throat	—	—	4	St. Vitus's Dance	— 3
Ophthalmia	—	—	3	Dyspepsia	— 12
Peripneumony	—	—	2	Hæmatemesis	— 1
Malignant Fever	—	—	7	Gastrodynia	— 7
Scarlatina Anginosa	—	—	10	Enterodynia	— 5
Measles	—	—	7	Diarrhœa	— 8
Whooping Cough	—	—	3	Constipation	— 2
Small-pox	—	—	3	Scirrhus of the Liver	— 1
Herpes Zoster	—	—	1	Jaundice	— 1
Childbed and milk fevers	—	—	4	Diabetes	— 1
Acute diseases of infants	—	—	11	Gravel and Dysury	— 3
Tertian	—	—	2	Menorrhagia	— 5
				Chlorosis and Amenorrhœa	— 6
CHRONIC DISEASES.				Fluor Albus	— 3
Cough and Dyspnœa	—	—	87	Hæmorrhoids	— 2
Hemoptoe	—	—	5	Tabes Mesenterica	— 3
Pulmonary Consumption	—	—	12	Scrophula	— 5
Chronic Rheumatism	—	—	18	Lichen Pilaris	— 2
Sciatica	—	—	2	Prurigo	— 3
Asthénia	—	—	19	Lepra	— 1
Dropsy	—	—	6	Purpura	— 1
Paralysis	—	—	6	Gutta Rosacea	— 2
Apoplexy	—	—	2	Impetigo	— 5
Cephalœa and Hemicranium	—	—	10	Ecthyma	— 1
				Itch	— 6
				Porrigio	— 8

*Practical Remarks on the Diseases which occurred on board of His Majesty's Ship Astrea, on the Jamaica Station, during the Years 1787, 1788, 1789, and part of 1790: By STEWART HENDERSON, formerly a Surgeon in the Royal Navy; now of the Army Hospital Staff.*

#### INTRODUCTION.

HAVING been professionally employed in various situations and countries with large fleets and armies, where there was an extensive field for medical observations,

observations, I had an opportunity of witnessing disease in every shape, and had often to lament, that the means of relief were so inadequate, not only from a deficiency of useful medicines, but such auxiliaries as can alone render the practice of physic successful. However, within these few years great improvements have taken place in the medical department of the navy, (much to the credit of those who preside over that service) by a gratuitous supply of medicines, and every comfort necessary to preserve and restore the health of that valuable class of men to the state—the seamen of the royal navy. The situation of the surgeons has likewise been improved, and the posts of honour and emolument multiplied by the physicians to the fleets and hospitals having been *all* taken, this war, from the list of navy-surgeons, which has brought forward men of knowledge and experience, who had before declined serving; and induced men of abilities to come into the service, as their writings on professional subjects prove. But what is a better criterion, the success of their practice in surgery (as well as in physic), which the memorable victories gained by the British fleets, gave them an opportunity of shewing. These circumstances will, no doubt, have due weight with those who have it in their power to improve their situation; so that the public may reap the full extent of their studies and professional exertions, which will ultimately promote the welfare of his majesty's service, and contribute to the preservation of many lives.

But when we look into the medical department of the other service, we find that the sick of the British army (with very few exceptions) in every part of the world, particularly in the West-Indies, on the Continent, and at the Cape of Good Hope, have been entirely under the care of men, who never held any employment in his majesty's service, until they were appointed physicians during this war. In justice, however, to those gentlemen, we must allow, they came from a learned respectable body, and might possess profound medical erudition; but it has been fatally experienced, that no course of lectures, no reading, can qualify a man for medical service in hot climates; for, medicine being a conjectural art, can only be learned from extensive practice, experience, and observation, in various climates. It must therefore appear obvious to every judicious, impartial, and unprejudiced man, that there was a great impropriety in sending physicians to foreign climates, who had no local knowledge of the countries or their diseases, and were totally unacquainted with the habits and manners of soldiers, a knowledge essentially necessary to a military physician or surgeon.

From the great attention shewn by his Royal Highness the Commander in Chief to the arrangement and improvement of every department of the army, there is the best reason to expect, that a grievance, no less injurious to the public service than to individuals, will ere long be remedied. And it is to be hoped from his Royal Highness's consideration to whatever is suggested

gested for the relief of the soldier, the period is not distant, when the sick of the British army will enjoy equal medical advantage with the seamen of the royal navy. No good reason, I imagine, can be assigned why they should not. Policy—humanity, dictates it; and in justice to those army surgeons, who have been many years in his majesty's service, and have endeavoured to merit preferment, by professional exertions, a diligent and faithful discharge of their duty.

It is evident, from the nature and structure of the human body, and what we know of the laws which govern the animal economy, derangements inducing disease will ever occur from unavoidable causes, in spite of every human exertion; though their danger may be obviated, and some of them, no doubt, entirely prevented, by means which are certainly in our power.

#### PNEUMONIA.

The first disease which occurred was pneumonia, or inflammation in the lungs, and seemed to be occasioned by the cold, boisterous weather we met with in the Channel. The patients complained of violent pains in the thorax, cough, and difficult respiration; pulse frequent, and every symptom of pyrexia. In the beginning, bleeding was made use of, which afforded relief; a purgative was given, and a blister applied to the thorax; the sp. minder. with acet. scillit. and sometimes the vin. antimon. were given, with a view to promote perspiration and expectoration, which came on about the third or fourth day, and kept up by accidental and demulcent drinks, ad libitum. In the convalescent state, bark and wine, with a nourishing diet, were ordered, to recover from the debility which the evacuations and copious expectorations had occasioned. Our coming into the temperate latitudes seemed to accelerate the removal of these complaints; except in one man, a marine, who, after we left Madeira, informed me, that he was very much troubled with a cough and spitting of matter. Upon examination, it had every appearance of proceeding from an ulcer; his pulse quick and frequent, and profuse sweats in the night; he acknowledged to have been ill a twelvemonth, and had only returned from the hospital a few days before he embarked; he being told by the surgeon, whose care he was under, that he might recover if he went to a warm climate, which was his motive for not making his illness known when he came on board, for fear he would have been returned to quarters. Had he applied to me before we left Madeira, I would have requested to have had him left on that island, where he would have had every chance of recovery from the mild temperature of the climate; as his disorder was far advanced, and the heat of the weather increasing the debility, I had little hopes of his living to reach Jamaica. To mitigate particular symptoms, such as cough, pain, and stricture in the thorax, an antimonial anodyne draught was given every night, a blister was applied to

the pained part, and kept open, with a view to heal the ulcers in the lungs. I attempted it on the principle of supporting and restoring the general health; the Peruvian bark was given, with some preparation of steel; rice and sago for diet, with sometimes a bit of fowl, and good Madeira wine, humanely allowed from Capt. RAINIER's table, and often from the officers' messes.

On our arrival at Port Royal, he appeared to have gained strength; but, from being much disturbed by the noise on board, I thought it best to send him to the hospital, that he might have the benefit of a milk-diet, rest, and quietness; but he died soon after. Upon the whole, from this man's case, and many others, which have since fallen under my observation, I cannot recommend a hot climate for confirmed pulmonary consumption.

#### RHEUMATISM.

This disease, to which seamen are particularly subject in northern latitudes, when exposed, after being over heated, to the sudden influence of cold, is distinguished into the acute or chronic: the latter is often feigned, and not easily discovered by the most discerning physician. This complaint was the consequence of the cold moist weather, which produced pneumonia. The first patient was of a plethoric and rigid fibre, complained of universal pains, especially in the joints, which were most severe when warm in bed; pulse frequent and hard; thirst increased. Bleeding was freely made use of, which relieved the pain, and abated the febrile symptoms; a purgative was given, and he took one scruple of the pulv. dover. every hour, until a plentiful perspiration came on; it was kept up, and encouraged by drinking balm or sage-tea; by repeating the sudorific, his fever and pains left him, except in one of his knees, which a blister removed.

The other case which occurred was of a chronic nature. The patient chiefly complained of pains affecting the lower joints, without febrile symptoms. He was of a relaxed and debilitated habit. Upon inquiring into his character, I had no reason to suppose that his complaint was not real. I put him on a better diet, with wine, and to take forty drops of the tinct. guiac. volat. with 20 drops of tinct. opii, twice a day; at the same time, to strengthen the system and restore the parts to their proper tone, bark and steel were given, and warm stimulating applications to the pained parts. By a continuance of those stimulants and tonics, all his symptoms were removed; perhaps assisted by the warm weather, for he had no return of them during the rest of the station, a proof that a hot climate is favourable for preventing the attack and recurrence of this disease. Had his complaints not given way to those remedies, I intended to have given him calomel, as an alterative, having found it of great service in several cases of rheumatism, especially when there was reason to suspect a venereal taint in the habit.

REMITTENT,

REMITTENT, OR MARSH FEVER.

This fever, the legitimate offspring of all hot climates, especially where marshes abound, is the autumnal disease of most parts of Europe, only appearing in a milder degree. It has been described by authors under various names, *bilious, yellow, Jamaica, Senegal*, and in Bengal, *pucka*; but multiplying distinctions which do not exist, only serves to perplex and mislead; for it will be found to be the same individual disease, under different modifications, depending on constitution, season of the year, and local situation. The cause of this fever, in all its varieties, is marsh effluvia; nor can, in my opinion, any other cause produce it. We find that, in some places at the Cape of Good Hope, where no such cause exists, this fever is unknown. We likewise find, that strangers are more liable to be affected by this noxious effluvia, and have the disease in a more formidable degree than the natives of the country, whose constitutions acquire a certain power of resisting it from habitual exposure: at the same time, its effects on them are obvious, by shortening the duration of life. I do not think that the original disease produced by this miasma is infectious, but that it may alter its type, and become highly contagious from concurrent causes; as from too many diseased bodies being crowded together, without paying sufficient attention to ventilation and cleanliness. This appears to have been the case in the British hospitals, in every part of the world, and occasioned the great mortality which has prevailed in the army, particularly in the West-Indies and on the Continent. When a man was sent into these hospitals, however slight his complaint, it degenerated in a very few days into the most malignant fever; and, as Dr. SINNOT very justly remarks, there was less danger in entering into the field of battle than attending our sick in the general hospitals. This noxious exhalation enters the system, either by the lungs, skin, or stomach; but the manner in which it produces those symptoms of disease which characterize the fever, does not appear to be well understood. We can only perceive its general effects on the system; and that it may lurk for a certain time in the habit before morbid movements take place. Several instances of this occurred when I was last at Jamaica. His Majesty's sloop of war, *Alert*, went up to Rock Fort to water, and anchored close to the shore, when the atmosphere was charged with marshy exhalations; her crew were then in perfect health. She immediately went to sea, and fourteen days after, the greatest part of the men were attacked with the remittent fever, and it was observed, that the men who had most access to the shore, were the first seized with the complaint. The subjects on whom this fever exerts its greatest violence, are of two different temperaments; first, the young and plethoric, and those of a rigid irritable fibre, and great excitability, have every thing to fear from exposure to the action of this poison, especially when

the body has been overheated, either by the use of stimulating liquors, or by violent exercise in the sun; secondly, those who are under the impression of fear or disappointment, and are constitutionally deficient in energy of mind and body, who may be said to be considerably under the standard of health, and easily affected by every debilitating power.

As this exhalation is found to exert its influence to a considerable distance, notwithstanding every precaution to prevent it, thirty of our men felt its effects on board of ship. The patients of the first class were young men (chiefly marines) of athletic habit, who had never been in a hot climate. They complained of nausea, sickness, violent pain in the head, particularly in the fore-part, and strong pulsation of the temporal and carotid arteries; the eyes became red and turgid, with evident determination of the blood to the brain. The lungs and stomach appeared to be in a state of inflammation, and great irritability: the latter rejecting every thing taken into it; the tongue white; skin dry; the pulse quick and full. From the violence and rapidity of the symptoms affecting organs of primary importance, I considered it necessary that something decisive ought immediately to be done, before the morbid movements had made too great progress. With a view to relieve inflammatory symptoms, and prevent the brain being oppressed, bleeding was freely resorted to, and not by any determined quantity, but until the symptoms subsided, which was manifest from the pulse becoming soft and regular. Cool air was freely admitted, and cold applications to the head were directed to be used; after bleeding, a large blister was applied to the region of the stomach, which removed the pain and irritation of that organ. Calomel, with James's powder were administered to procure stools, and promote perspiration; this was encouraged by drinking, *ad libitum*, of balm or sage tea. In the convalescent state, bark, wine, and a nourishing diet, were had recourse to, which removed the debility brought on by the violence of the symptoms, as well as that occasioned by the necessary evacuations.

The second class were men of a lax fibre and diminished energy of mind and body, with a considerable degree of nervous irritability, and but little vascular excitement. The effects of the virus upon these, were giddiness, sickness, and disagreeable sensation at the stomach, attended with frequent vomiting of a rosy matter; the head much affected; the pulse quick, irregular, sometimes tense; the countenance desponding; the skin dry; the tongue white; the belly torpid; the secretion of bile diminished; the urine scanty and limpid. As there was no inflammatory disposition inducing dangerous determinations of the blood, bleeding was not employed; although there was nausea and sickness. Antimonial emetics were not used, having always observed that they increased the irritability of the stomach, which is the most troublesome symptom attending this form of the fever; a blister sometimes had the best effect, when applied to the region of the stomach  
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and, in some cases, over the whole of the head. Camomile tea, and the effervescent draughts were given, with a view to relieve the nausea, and vomiting: to promote perspiration, James's powder, with camphor, were administered every hour, until the effect was produced. The bowels were opened by rhubarb and calomel; to support and increase the energy of the system, bark and wine were administered as soon as the stomach had the power of retaining them, and continued with a nourishing diet, until health was perfectly restored.

There is another form in which this poison acts on subjects partaking neither of the violent inflammatory symptoms of the first, nor the diminished energy or nervous affection of the second. Men, who may be said to be neither above nor below the common standard of health, are able sometimes to overcome the influence of this noxious vapour; but, when the habit was not vigorous enough to resist it, they were generally seized with cold shivering, succeeded by great heat, sickness, and sometimes a vomiting of bile; the tongue white and furred; the pulse quick and full; thirst great; urine high-coloured; although there were marks of irritation and inflammatory diathesis in the beginning, but yet not sufficient to justify blood-letting; which, I considered, would have diminished the vital power, and reduced the patient to the same state as described in the second form. I therefore thought it more advisable to employ mercurial purgatives, which had a very good effect in carrying off the biliousordes collected in the first passages, and supporting, in a great degree, the febrile phenomena;—Emetics were sometimes given; James's powder, with camphor, to promote perspiration, and effect a complete remission. After the bowels were emptied, and the sudorific process completed, the bark was immediately given, and continued day and night, which generally checked the progress of the disease. Wine, and a nourishing diet, in the convalescent state, were always allowed. In concluding these few remarks on the varieties of the endemic fever, I must observe, that the first form of the disease appears only in subjects newly arrived from Europe, the young and plethoric; for a residence in a hot climate, and other debilitating causes, remove that rigidity of fibre, and density of the fluids, which co-operated at first in producing those violent derangements. Men of this description should therefore, before their arrival, undergo some preparation to reduce their habits; while those of the second class ought to resort to means which may give a certain degree of strength and energy to the system. They will then have the disease in a milder degree, such as it appears in those subjects attacked with the third form of the disorder.

(To be continued in our next Number.)



*An Account of a Species of Cantharis, found in Buck's County, Pennsylvania; including Observations on its Medical Properties: By Dr. ISAAC CHAPMAN.*

THIS insect has a very near resemblance, in its external form, to the *melœ vesicatorius*, *alatus viridissimus*, *nitens*, *antennis nigris*. Linn.—or Spanish flies; as they are commonly called, but it is rather smaller than those brought from Spain, and of a different colour; the head is of a very light red, with black antennæ, the elytra, or wing cases, are black, margined with pale yellow, and a stripe of the same colour extends along the middle; the tarsi have five articulations; the mouth is armed with jaws, and furnished with palpi.

Observing them plentiful in my garden, I caught as many as weighed about an ounce when dried. ISAAC PRAUL, one of the young gentlemen studying medicine with me, powdered five or six of them, and laid the powder on a plaster, which he applied to his ankle, and in eight or nine hours they produced a very good blister.

(Dr. Chapman then enumerates three cases where he applied these flies, in all of which, they drew good blisters:—he thus proceeds)—

I have since used these cantharides in near one hundred cases, as vesicatories, and, in every trial, I found their qualities equal, and rather superior to those of European cantharides; they appeared to have fully as much effect in relieving the symptoms, and removing the diseases for which they were applied; and their effect on the system was the same, having, in several cases, produced a slight stranguary; the diseases in which I used them were various, as fevers, pleurisy, nervous disorders, &c.

From several experiments (which Dr. Chapman recites) it appears that every part of the insect is endowed with an equal, or nearly an equal degree of their quality; they likewise shew their great power, as about one quarter of a grain was sufficient to produce a good blister as large as a shilling.

(Then follows the manner of gathering and drying the insects, which, as it is chiefly interesting to the inhabitants of America, we here omit.)

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

IN an article of your first Number, in which the Author is pleased to speak of me in relation to MAYOW, he confounds the two SCHERRERS—one of whom wrote against Dr. FERRO, on the Use of the Vital Air; and  
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also published an Analysis of Mayow ;—while the other, the chemist of Jena, proposed to translate my Abridgment, (see the *Annales de Chimie*,) but now intends to translate Mayow, and to add an Appendix\*. The former is usually called Scherer of Vienna. Whether this Scherer, or myself, first drew notice towards Mayow, is a question of total indifference to me.

Clifton, March, 1799.

THOMAS BEDDOES.

*On the Application of Pneumatic Chemistry to the Cure of Diseases:—By Citizen FOURCROY.*

THIS memoir, which we announced in our last, is only an introduction to what the learned author intends to publish separately, from time to time, on all parts of the animal economy on which modern chemistry has begun to throw any light ; with a design to point out what is known of that branch of physics, hitherto so little advanced, as well as that with which some men only pretend to be intimately acquainted ; to shew what we may hope to learn from experience, and thus at once to encourage the labours of other scientific men ; to cultivate a field, promising so prosperous a harvest, and to confound those enemies, who attack the system with their discordant clamours.

The general result which Citizen FOURCROY has always insisted upon, is this—that in the new method of operating and reasoning, adopted by chemists, there are contained a very precious and valuable means. Hence it has been already discovered, that the blood is heated in respiration ; that it loses the carbon and hydrogen ; that it absorbs the oxygen ; that it consequently is renewed, and acquires that quality by which it stimulates the heart ; that it every where generates heat and life, and changes its nature through the circulation, &c. It has produced a number of other discoveries respecting respiration ; the formation of the bile ; the nature of albuminous, gelatinous, and fibrous humours. It promises greatly to assist the physiologist in the study of the nature and the functions of animals ; but, for this purpose, an ardent continuance of research is indispensable ; as, what has already been discovered, is but a small part of what is necessary to form a general theory of animalization, and the phenomena of the animal economy.

This method is also applicable in the knowledge of diseases ; but here still less has been done than in the former part, and it will be impossible to form a doctrine of pathology, until the termination, or at least, a considerable progress has been made in a work which has yet been scarcely begun. One of the objects of these applications, which seems farthest advanced, at least as appears by the noise it has lately made among medical men and philosophers, and the discussions

\* For a more particular account on this subject, we must refer the Reader to the article, "MEDICAL AND PHYSICAL INTELLIGENCE," in this Number, page 200.

discussions it has received, in all the societies employed in medical research and study, is that which regards the *medical properties of OXYGEN*; a word (says Citizen Fourcroy), the very name of which will draw upon me numerous groups of men, animated by different opinions and passions, but alike enemies to this system.

To oppose these formidable bodies of antagonists, Citizen Fourcroy proceeds to shew the progress of the pneumatic doctrines, from the year 1779 and 1780, stating the principles on which it is founded, and the strong arguments in its favour. For this detail, we refer the reader to the memoir itself, containing 55 pages, 8vo, and shall content ourselves with the following extract:—

“ A remarkable epoch in the annals of history, that of the war of French liberty, furnished me with frequent opportunities of making a useful application of my ideas of the healing powers of oxygen. In that war, so terrible at home, and at the same time so glorious for the Republic abroad, a concurrence of circumstances rendered mercury very scarce. The advice which I then gave to Government, as to the possibility of substituting several oxygenated substances for mercurial preparations, in the treatment of venereal and psoric patients, who required a great quantity of these preparations, in the military hospitals, not having been followed, because the superintending officers of health in the hospitals doubted the efficacy of the experiments I proposed, while their confidence in mercurial remedies was founded on long experience, I determined to publish my opinions, and to explain my ideas in my public lectures; confident that they would gradually take root in the minds of the pupils, and would there find that reception and attention, which alone could make them productive of those useful effects of which I thought them susceptible. In the fourth year of the Republic, therefore, both in the school of medicine, and the museum of natural history, I insisted more strongly on this doctrine, and the benefits likely to result from it in the healing art, than I had hitherto done. I particularly adopted, as the subject of discussion, the citric ointment, of which, I knew, there was a great consumption for patients in the itch. I demonstrated, that the oxygenation of fat, by the oxyde of mercury, and the acid of nitre, was to be considered as the principal cause of its virtues, and that it might perhaps be possible, altogether, to dispense with mercury in that preparation; and the nitric acid alone appeared to reduce the fat to that state of oxydation, where it acquired its well-known medical properties, and that there was every reason to think that in this state it possessed, without mercury, every property of the citric ointment. Citizen ALYON, who was present at this lecture, immediately entered into my ideas, and informed me, that he was determined to make the experiment, in order to ascertain the oxygenating effect of the nitric acid upon fat, and to satisfy himself

himself of the properties which it acquired. These first experiments, made with the good sense and prudence of which I knew him possessed, were successful beyond his expectations.—He proved, that the oxygenated fat was antipforic, and antisypilitic. He added the use of the nitric acid, employed with the same view by some English physicians, after their countryman, SMYTH\*, who had first made the discovery in the East Indies. The success of this combined method of applying it, externally and internally, was not afterwards diminished, and the report of the commission which had been directed by the school of medicine, to prosecute the new experiments, will best evince, how far the first ideas which I had given were improved by the attention, the abilities, and the perseverance of Citizen Alyon, who had a number of obstacles to encounter.

“ In the mean time, while my efforts began to produce some fruits in France, philosophers of other countries, far from being idle contemplators of these new ideas, adopted and received them with greater eagerness than the French physicians. If some of these carried the pretensions of the modern chemical doctrines too far; if one, for example, already endeavoured to explain by this all the phenomena of the animal economy; if another saw in it the means of prolonging life; the greater number, leaving these dangerous paths, followed the more certain road of experience. Three physicians have already distinguished themselves in the career, which I congratulate myself I have opened, although some of them have not, on this head, done me the justice which I had a right to expect. M. VON HUMBOLDT, of Berlin, ingeniously combined the new facts of Galvanism, with the efficacy of chemical agents on the organs of living animals, and thus clearly explained the phenomena of the functions of vegetables and animals. Dr. BEDDOES, an English physician, examined and carefully determined the action of several elastic fluids in diseases. Dr. ROLLO and Mr. CRUICKSHANK, of the same country, in studying the symptoms of a disorder almost unknown here, and yet more common than is generally believed, *diabetes mellitus*, collected for the better investigating its nature and causes, all that the new chemical discoveries offered, and was applicable to that subject. They observed in that disease a primary affection of the stomach, where vegetable food, by a particular attraction, acquired a saccharine quality, which was communicated more or less rapidly to the urine; produced a fur-oxygenated state of the whole system; and confirmed that ingenious theory, by the success of the remedies they employed. Their work, too little known in France, but with which Citizen Alyon proposes to enrich the French school, is one of the scientific monuments which will best prove what advantages medicine may derive from chemistry.

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\* We presume, instead of SMYTH, it ought to be SCOTT.

" Thus the improvement which I have announced, has made such an impression, that there is no further fear of its being checked in its growth. The only obstacle which can occur to its progress, is, that medical revolutionary spirit, which may indiscreetly accelerate it; a dangerous precipitation of which there already appear too strong symptoms in the learned world. That chemical doctrine, the moderate and prudent application of which may renew our knowledge of the animal economy, seems already to mislead minds, in other respects enlightened and ingenious. They wish to rear an edifice without having collected the materials. It is undoubtedly known, that the animal system, in which oxygen is a great agent, may, either through deficiency or excess of that vivifying principle, be impaired; that it is at once the primary source of heat, irritability, and the vital motion; that its use, either externally or internally, in particular diseases, excites in general the action of life; that we ought to admit two classes of remedies in this consideration, the oxygenating and deoxygenating; that the former increase the activity of the whole system, heat, circulation, force, and motion; that the latter, on the contrary, diminish all these natural effects; that frequently, in the evident empiricism of good practitioners, which supplies the place of certain principles hitherto wanting in the healing art, the medicines which they prescribe act by one or other of these powers, oxygenating or deoxygenating. But, if such fundamental assertions may be reckoned among the number of those truths, which medicine owes to modern French chemistry; how many solutions must be attended to, before we can abandon the path hitherto followed, and look upon all the ancient foundations as errors and chimeras? We are yet far from possessing the requisite data, and that collection of truths necessary to form a complete doctrine, a new medical system! Scarcely do we know some of the phenomena of certain functions in the animal economy: scarcely have we made any fortunate applications of the modern pneumatic discoveries; and already we begin to draw from thence general inductions on the nature and causes of diseases: scarcely have we sketched the analysis of some of the principal humours in a state of health; and already pretend to class diseases after the chemical changes of liquids, and to form a humoral nosology. We speak of classing diseases according to the excess or deficiency of azote, oxygen, or carbon, before the proportion of the principal constituents in any particular animal substance is ascertained. What *may be*, is confounded with what *is*; mere appearances, given only as such by authors, are laid down as demonstrated truths. Persons of such sanguine ideas, eager to form theories, as general and fleeting as their fancies, will, it is to be feared, by too precipitate an application, and hypothetical results, very essentially injure a science, which they have not sufficiently cultivated to employ it with discretion and advantage."

*On the Connection subsisting between the Gout and Hypochondriasis in Men, and the Gout and Hysteria in Women:  
By Professor TODE, of Copenhagen.*

(Extract from the Journal of Inventions, Theories, and Controversies in Medical and Natural Philosophy, Gotha, 1798.

ACCORDING to the opinion of the celebrated Prof. TODE, of Copenhagen, "hypochondriasis is merely an imperfect podagra residing in the stomach and bowels, whereas its natural and proper situation is in the great toe." This idea, though not a little eccentric, and even whimsical at first view, the ingenious author supports with many plausible arguments. In a small work which he has lately published, intitled, "*Necessary instructions for hypochondriacs who wish to become acquainted with their real situation, and guard themselves against danger*; 8vo. Copenhagen, 1797," (in German) the Professor reasons chiefly upon the following facts: 1. That a similar bodily constitution renders persons equally disposed to hypochondriasis, as it does to the gout; 2. that hypochondriacal symptoms frequently alternate with attacks of the podagra, and that immediately on the perception of the latter, the former cease and disappear. Upon the strength of these two facts, Dr. Tode is anxious to establish the identity of what are commonly considered separate, the hypochondriasis and the podagra. With due deference to this learned writer, however, we cannot assent to this doctrine; for the following reasons. 1. With respect to the alledged similarity of bodily constitutions, subject to the attacks of the hypochondriasis and podagra; this analogy either proves too much, namely, the identity of all diseases to which persons of a robust constitution\* are subject; or too little, as it is well known, that *real* hypochondriacs are far from possessing a sound healthy constitution. And although we were to admit the alteration between the attacks of the hypochondriasis and those of the podagra, this would not establish the identity of the two diseases. It is a fact generally admitted by medical practitioners, that one distemper may remove or supersede the other, in a variety of ways, without any identity subsisting between the two, and without any change or translation of a morbid matter from the place of the first to that of the second disorder. The gout, therefore, may probably silence the complaints and sufferings of the hypochondriac, by a sort of counter-revolution effected in the body. Thus, it has been observed, that after the expiration of cutaneous tumours, the gout or consumption

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\* According to Prof. Tode, persons afflicted with gouty and hypochondriacal diseases, generally possess a sound constitution.

followed; but can it on that account be justly inferred, that a cutaneous tumour is virtually nothing but a concealed gout or consumption, limited to a certain part of the body? Thus, also, after eruptions or ulcers had been healed, the patient frequently became subject to epileptic fits; but can we, with any propriety, call such eruptions and ulcers, a cutaneous epilepsy? This, indeed, could not be consistently asserted; neither can the position of Mr. Tode be maintained, that the hypochondriasis is virtually the same thing with the gout in the stomach and bowels.

Much truth, however, is concealed in this unlimited doctrine of the Professor. The whole misconception in the proposed theory arises from the author's confounding *pure hypochondriasis* with a defective digestion, or *dyspepsia*, which is essentially connected with the arthritic disease, and which always, sooner or later, precedes the symptoms of the gout. This species of dyspepsia has been accurately described by TRAMPFL, in his "*Observations and Experiments*; two volumes 8vo. 1788 and 1789. Lemgo:" (in German): and the partizans of the *Brutonian System* have very lately, though with much exultation and pretension to novelty, excited the attention of medical practitioners to that latent enemy of the gouty and hypochondriacal. This dyspepsia should be substituted for the hypochondriasis, in all cases where Mr. Tode speaks of its cure and connection with the gout. With respect to the *pure hypochondriasis*, we may safely appeal to the judgment of experienced medical men, that it is by no means necessarily connected with the podagra, and that real hypochondriacs are least subject to the gout; on the contrary, this latter phenomenon is seldom, if ever, observed by practitioners. It must however be admitted, that even the dyspepsia, as combined with the podagra, is very frequently a troublesome and torturing malady, and that it may be easily confounded with the hypochondriasis; particularly in times and countries, where it is not unfashionable to complain of hypochondriasis, and where only a small portion of *ennui*, discontent, ill humour, or a corrupted stomach, may suffice to procure a person the reputation of a complete hypochondriac.

Although Dr. Tode's pathology is inaccurate, with regard to *pure hypochondriasis*, yet the diet and regimen he prescribes will in general be found salutary; the medicines however, which he recommends for the cure of the disease, are not only inadequate, but they are likewise too inert, and do not correspond with the leading indications to be attended to in the hypochondriasis. Whoever has had the treatment of patients of this description intrusted to his care, in whose stomachs there is a continual disposition to acidity, will neither hope nor expect to vanquish such a distemper, by administering a little magnesia and quassia, as Mr. Tode advises in his treatise. It is not however our intention to enlarge, in this place, upon the treatment of the true hypochondriasis, but only to remark, that the author has not accurately

rately distinguished this disorder, which he appears to have confounded with dyspepsia, the inseparable companion of the gouty.

To afford the reader an opportunity of judging how far the *method of cure* prescribed by the Professor coincides with his theoretical notions, we shall here insert, from the practical part of his essay, a few particulars relative to the medical and dietetical treatment of hypochondriacs.

"A patient afflicted with hypochondriasis ought not to imagine that medicine will afford him much relief, or that nature requires chiefly artificial aid; he may, however, expect more benefit from a proper attention to diet, than from dabbling in physic. It is an ill-founded conceit, that the numerous and diversified symptoms of this disease require a tedious, artificial, and compound method of cure: on the contrary, as all these symptoms originate from the same source, a few appropriate medicines are sufficient to answer the purpose of checking and suppressing them.

"I advise only one general method of curing this disease, which is usually effectual in all its stages, and in all its symptoms, as being well calculated to remove the predisposing cause of the disorder. From whatever cause hypochondriasis may arise, whether from nervous debility, or from a concealed podagra, it always depends on two different deviations from a state of health; namely, first, *weakness* of the stomach or the intestines, as well as the other parts of the body; and secondly, on an *acid* in the stomach.

"Weakness requires strengthening remedies, and for this purpose the quassia is one of the most proper; acidity must be absorbed, and to accomplish this, the white magnesia is fully adequate.

"A third indication of cure sometimes claims the attention of the practitioner, viz. to remove *spasms*, which frequently occur in hypochondriac patients, although they are, in general, known only from their effects. These require the use of one remedy only, namely, what is vulgarly called the nervous tincture (*liquor nervinus*), being a solution of camphor in Hoffmann's anodyne liquor, which consists of ambergris dissolved in a spirit distilled over roses, so that the patient take from half a grain to a grain of camphor for a dose, frequently repeated. This powerful remedy ought, however, to be used only when the two preceding medicines have proved inefficacious, and after the first passages have been duly evacuated of acrimonious and acid humours, or at least a proper regard paid to this important circumstance."

With respect to *diet*, both as to the articles of food and drink, which are the most proper for hypochondriacs, Mr. Tode suggests many valuable hints. These occupy his 16th and 17th chapters, which extend to upwards of twenty pages, and of which, for want of room, we shall give the reader only a summary account.

The author justly deprecates the use of all acid and acidulated food and drink in this tedious disorder. Of the vegetable articles, he recommends particularly



particularly, the sweet red turnip, or beet root, carrots, cauliflower, French beans, green peas while young and tender, mealy potatoes well boiled, lettuce, or other salad, without oil, vinegar, or eggs, sweet French prunes, rice boiled in water, &c. On the contrary, he strongly dissuades hypochondriacs from the use of onions and garlic, as well as all other heating spices, cabbage, (even *sour-kraut*, the favourite dish of the Germans, which agrees only with those who are not troubled with acidity,) all decoctions of oats and barley, as well as porridge, hasty puddings, dishes made of meal, as pastry, confectionary articles, and every kind of milk and cheese.—Among the different species of animal food, he considers beef, mutton, light game, and fresh fish, as wholesome to hypochondriacs, but condemns veal and lamb, particularly when very young and tender, as being unwholesome: beef or veal *a-la-mode* is, according to him, extremely pernicious, on account of the quantity of spice employed in the cooking of these dishes, which is but too frequently used for the purpose of covering or palliating a bad taste, arising from the putrefaction already commenced in such meat as is employed by public cooks; dishes, which the late celebrated Dr. ZIMMERMAN emphatically said, were of *infernal cookery*. Our author further inculcates the necessity of abstaining from smoked and dried fish, eels, sprats, salmons, crabs, lobsters, and herrings; the last of which, however, may be eaten salted, with moderation, if not too fat.

In the article of beverage, he prefers claret wine to all others; of the sweet wines, Madeira is the most conducive to the health of hypochondriac and nervous patients; but Rhenish wine and Champagne are hurtful, on account of the great quantity of fixed air they evolve in the bowels.—Beer is more or less objectionable, according to its strength and imperfect fermentation: he recommends, therefore, a weak beer, somewhat bitter, and well fermented, which is a refreshing and excellent beverage to quench thirst. All sorts of ardent spirits are highly pernicious; while tea, coffee, and chocolate, are hurtful only when used immoderately; that is, either too hot, or too strong: bohea tea is, in his opinion, the most wholesome.

With respect to dress and exercise, he gives several useful precepts, and concludes this interesting and popular treatise with the following remarkable declaration: "I have here advanced no other proposition, than such as are principally confirmed by my own experience, and of the truth of which I am fully convinced. I have not published these sheets as a Doctor and Professor of Medicine, but as a convalescent from hypochondriasis, and for the benefit of my fellow sufferers, as well as the *candidates for the gout*. If they are useful to the public, I shall, without reluctance, forfeit the approbation of my learned colleagues."

Without wishing to detract from the merit of originality, equally due perhaps to Mr. Tode, as well as others, we shall in this respect observe, that

that about twenty years ago, Dr. WEIKARD, of Heilbron (one of the most zealous apostles Dr. BROWN has found in Germany), maintained, "that the morbid matter of the gout is the *proximate cause* of the hypochondriasis and hysteria;" see his '*Miscellaneous Medical Writings*, No. I. *Frankfort*, 1788, 8vo, page 117.' Dr. W. upon this occasion, asserted that "if our nerves have, from a variety of causes, been debilitated and rendered more irritable, it is then probable, that some specific matter of gout, scattered through the body, and not yet fixed to any particular part, (in other places the author calls it *crude* or *immature* matter,) produces irregular motions in the nervous system, in consequence of which we are afflicted with a nervous disease (hypochondriasis, hysteria); whereas our ancestors, as is still sometimes observed among country people, after an irregular mode of living, were punished with the gout."

To gratify those readers who are anxious to restore to every author his due, we shall here insert a passage from the writings of the ingenious STAHL, who was well acquainted with the alteration *novu* supposed to take place between the hypochondriac and arthritic affections. That great man expresses his sentiments on this head in the following words: "Inveni utique per hos 24 annos, imo certe amplius, curiose inquirendo in *reciprocas conspirationes* arthritico-podagrico hæmorrhorum affectuum non solum tantum numerum, sed quod præcipuum est, tantam constantiam et universalem quasi veritatem harum rerum, ut hinc merito occasionem sumserim, longe diversum de his rebus conceptum formandi, quem naturæ consentaneum esse a priori et posteriori abunde expertus sum. Unde adhuc semel animum ad historicam etiam veritatem *conspirationis* hujusmodi hæmorrhoidalium, ischiadicorum, nephriticorum, sanguinei mictus et podagricorum *consensuum* et *reciprocarum collisionem* aut *concursum*, omnino advertere cohortor. Neque tamen hoc solum, sed superest utique circumstantia adhuc ad historiam ipsam pertinens, nullatenus postrema dignitate æque atque ordine: nisi quod hunc familiarius ita potius invertat aut turbet, ut nulla habita ratione prioris aut posterioris vel quolibet tempore, ceu promiscue, minus auspicato successu sese exferat. Est hæc *reciprocatio* arthritico-podagricorum pathematum cum hypochondriasis, impetuosius quantumque affectibus: nempe non simpliciter spastico-tensivis, sed omnino graviter congestoriis sanguinis, et hoc ipso viscerum inflammatoriis, non magis periculosis, quam subinde etiam funestis." J. E. STAHLII, *Theoria medica vera*. Hallæ, 1737. pag. 1033. § XXI. XXII.

It is obvious, from this quotation, that in the sense which he affixed to this alternation, Stahl followed his own system. He did not indeed derive hypochondriasis from an arthritic matter, nor did he consider this as the proximate cause of the disease; but, according to him, the hypochondriasis, gout, podagra, and a hundred other morbid phenomena, were *molimina naturæ*,  
generated

generated by congestions and disorders in the circulation, and in the treatment of which every thing depended on the hæmorrhoidal flux, the great axis round which the whole of his system turned. Much truth is doubtless implicated in this system, which was founded on an accurate observation of nature; yet, on the whole, it only proves that a '*Theoria medica vera*' may contain many and considerable errors, which, however, we cannot discuss in this place, without trespassing too much on our room, and the patience of our readers.

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*On the Application of hot Flour in Erysipelatous Inflammations, and Cutaneous Eruptions:—extracted from a Memoir of ALPHONSE LEROY, Professor in the School of Medicine at Paris.*

IN the first number of this Journal, page 84, we mentioned the *external application of hot flour*, as a new remedy, which has been successfully employed in Paris, by the strong recommendation of LEROY. The importance of such a discovery, and the celebrity of its author, demand a more particular account of its application, as well as its effects.

The first case related by Citizen Leroy, is that of a woman to whom he was called, in 1784, afflicted with an erysipelas in her face, accompanied with ulcers. Having formerly observed, that lotions, cataplasms, decoctions of elder, and fat substances, were often hurtful in erysipelas, he thought proper to forbid the use of them to his patient, and prescribed the application of wheat flour, heated in a skillet. A surgeon, however, who came in immediately after, strongly condemned this remedy, and persuaded the patient to apply a poultice of bread and milk. Next day, Citizen Leroy found her face in a deplorable state; the eyes swelled, and running with water, and the power of vision apparently lost. This dreadful effect from the application of a cataplasm, for only twelve hours, still more confirmed him in the opinion, that *desiccatives*, such as hot meal, and hot ashes, were most proper in many cutaneous diseases.

In 1791, he was called to the female citizen DANGIVILLER, whom he found in a miserable situation. The disorder had begun with large ulcers on her arms, legs, and feet, filled with a clear aqueous humour, which turned into white matter, resembling that in the small-pox; and threatened to spread over the whole body. Her attendants had placed her on a couch, and covered the ulcerations with cataplasms. The fever was broke out, and there began to appear little black mortified spots. Not thinking it proper to make too rapid a transition from moistening to drying applications,

Citizen

Citizen Leroy prescribed, for twenty-four hours, a paste between two pieces of fine linen, to be changed every six hours: next day, he ordered the parts affected to be covered with dry and hot flour. This remedy was immediately related and ridiculed at court. The physicians amused their friends afflicted with similar complaints, by passing witticisms upon the flour-bath; but they did not long enjoy their laugh, for Leroy's patient quickly recovered.

In 1795, Leroy was called to a woman, who, during her imprisonment, had made use of great quantities of vinegar, as a preventive against the jail fever. When he saw her, she had been five weeks confined to her bed, covered from head to foot with suppurating ulcers. Under a large pellicle he observed a watery humour, which thickened into pus. Notwithstanding the assiduous attention of Citizen OBERLIK, an eminent physician at Noyon, who had ordered dry rags and lint to be applied to the sores, and seldom poultices, the disease increased, and the patient was reduced nearly to the last extremity. Citizen Leroy directed the suppurating parts to be covered with hot flour; he also ordered her a decoction of bark, to be taken several times a day. He prescribed weak broth of veal, or fowl, which they had not ventured to give her for fear of increasing putrefaction, a very generally adopted maxim in medicine, but too often fatal in its effects. In a short time, however, his patient recovered.

Last summer he was called to Citizen DELASSALE, aged 65 or 66, who had, for several years, been afflicted with a succession of disorders. He was threatened with dropsy in his breast; then attacked with a catarrh, which was succeeded by an excessive hæmorrhage of the lungs. At length, having recovered from these different diseases, he was troubled with ulcers on his back, shoulders, and breast. He would have appeared like a person flayed, if the pellicles which covered the ulcers had been taken off. The Professor caused him to be covered with linen cloths, filled with hot flour, powdering at the same time the suppurating parts, which began to emit a fœtid smell. This, with the extract of bark, weak broth, and light food, completed his cure. Notwithstanding the fever, he prescribed the broth, considering moist and sweet articles of food necessary in debilitating fevers, and which are very different from those of an inflammatory kind.

Very lately, he was called to the chambermaid of the female Citizen MERLIN, wife of the present Director. Her disorder was an erysipelas in the face and neck. They had been bathed with elder-water, and assumed a serious appearance, the fever commencing with drowsiness. Cit. Leroy prohibited all wet applications, and substituted dry flour, keeping her body open, which soon brought her out of danger.

The same remedy was successively employed by Cit. Leroy in the ring-worm, or tetters in the face, which seemed almost incurable. This regimen

is also applicable in swellings of joints, to which the watery or moist applications are obviously injurious.

Thus (concludes Leroy) dry and hot flour, hot ashes, earths, aromatic and other vegetable powders, combined with heat, are powerful remedies. The watery element appears only proper to cure the internal disorders of the animal economy. These observations he hopes will excite the attention of practitioners to the opposite element, viz. dry and earthy substances.

Whatever merit may be due to Professor Le Roy for his useful suggestions, he is not entitled to that of originality; nor will any experienced practitioner agree with him, that *dry* applications are useful in *all* stages of erysipelas, and other cutaneous, as he seems inclined to maintain.

Dr. UNZER, of Hamburg, as well as Dr. GESSENIUS, of Nordhausen, mention in their several works, a powder which has long been used in Germany, as a powerful disientient in erysipelas, arising from external injury, if the complaint be not merely a symptom or crisis of another more important disease. This powder consists of a mixture of dry flour with aromatic vegetables, a small addition of sugar of lead, instead of which, if occasion requires, camphor is sometimes substituted. If the ingenious Leroy had pointed out, with accuracy and precision, the particular habits, temperaments, constitutions, and other circumstances which deserved to be noticed in his patients; if he had informed us of the predisposing and proximate causes which gave rise to the virulent cutaneous disorders he has cured; and lastly, if he had described nosologically the particular species of cutaneous eruptions, together with the character and type of the fever which accompanied the complaint in each individual patient—the medical world would have been infinitely more indebted to him for such information, than for the most favourable accounts he could give of *general*, or, to speak more freely, *empirical practices*.

W.

*An extraordinary Case of difficult Parturition, successfully treated: By Dr. THOMAS ARCHER, of Harford-Town, Maryland.*

ON the morning of the 9th of May last, I was requested to visit a female servant of Mrs. E. who had been in labour four days. On examination with my hand to know the situation of the child, I was surprised to find that the os uteri was not dilated to more than the size of a halfpenny. It formed a thick, rigid, cartilaginous ring, not yielding nor becoming softened by the pain. The midwife in attendance informed me, that the patient was in her 30th year; that at her fifteenth year she had a prolapsus uteri, which was reduced.

reduced, after it was washed in a strong decoction of white-oak bark, and dusted with powdered resin; that this was her first child; that her pains had been considerably forcing, but the intervals between them long; and that the waters had been gradually discharging for two days. From this statement of her situation, I did not doubt but her labour would be lingering. Her constitution was robust and strong. Her pulse was evidently marked with symptoms of tension or convulsive action. I let blood to eighteen ounces, directed gentle laxatives, with emollient glysters to be administered occasionally; oleaginous injections into the vagina, and the vapours of hot water were advised, as means for relaxing the os tincæ. She took a dose of opium and stramonium to procure rest, and remove unprofitable pains. I now left her to the care of the attending midwife till the following day in the evening.

May 10th. At this time there was no perceptible alteration in the dilation of the os uteri. The child's head could now with difficulty be felt through the os uteri, which was advancing with every pain, without dilating in the least. A few pains protruded the uterus, with its contents, without the os externum! The child was now evidently dead; which, from several well-marked circumstances, had taken place about ten days previous to the present period. I dreaded the event of a case so new and alarming, and informed her mistress, there was scarcely a chance for her life; that it was possible to deliver her, but the consequences of the operation might be fatal to her. The distance of a physician rendered it impossible to call a consultation. Death appeared as the closing scene of every plan I proposed; in fact, her situation required such immediate assistance, that there was scarcely a moment for deliberation. To leave a mass within the uterus, which was hourly becoming more offensive, and to be an idle spectator of the fatal event that must ensue, was depriving her even of the chance which a doubtful and desperate remedy afforded.

I recollected having read several well attested cases, where the uterus was lacerated by its violent contraction round the body of the child in parturition. The child was squeezed partly through the aperture into the abdomen; it was, however, delivered, and the lacerated uterus healed without any difficulty, or even the occurrence of an uncommon symptom. The favourable event of these extraordinary cases, determined me to hazard an artificial division of the neck of the uterus (which appeared to be less dangerous than a laceration), to make room for the delivery of the child. Unknown to her, or any of the attendants, except the midwife, who held the candle (for it was now night), with a common spear-pointed lancet, I made *three* incisions in the neck of the womb, which was very much distended; each about two inches in length, viz. one from the uterus leading towards the urethra; one towards the perineum; and the third towards the left labium.

The pains at this time were not strong; yet they were sufficient to expel the child. After the incisions were made, the delivery was almost instantaneous. The umbilical chord was wrapped round the body, arm, and neck of the child. The incisions produced no pain, neither did there any hæmorrhage follow the lancet. The uterus, after the separation of the secundines, which came away without difficulty, contracted, and returned with but little assistance to its pristine situation.

The patient was now put to bed, and desired to be kept quiet. I directed anodynes to be given occasionally, and glysters to be administered, so as to procure one or two dejections daily. Neither forenefs, pain, nor fever followed this practice, more than would have happened in an easy, natural labour! The lochial discharges were very inconsiderable, and not at all offensive. She was up and walking about her room in three weeks after delivery, and is now in perfect health.

*Singular Case of an Omental Hernia: By Dr. JAMES STRATTON, of Swedesburgh, New Jersey.*

ON the 26th of April, 1795, W. C. of the county of Salem, in New Jersey, aged 45, of a firm constitution, was attacked with a violent colic. On the 28th his bowels were freely opened, and some relief was obtained by injection: 30th, the bowels continued open, but very uneasy; a hiccup, or a kind of belching, was observed, which frequently brought up a part of the contents of the stomach. On examination, a tumour was found in the right groin, of about the size of two fingers, owing to the protrusion of a portion of the omentum through the ring in the abdominal muscles, forming an omental hernia. After plentiful bleeding, attempts were made to reduce the protruded part, without effect; the tumour being hard, and very *tender*\*, cold saturnine applications were then industriously employed, and continued for several days; during which time, several attempts were made to reduce it, but with no better success. The patient having refused, after repeated solicitations, to submit to any operation, remained in nearly the same state until about the 10th of May, being two weeks after the attack, when the tumour subsided, and became soft, insensible, and crepitous; at the same time some appearance of tumour was observed in the most depending part of the scrotum, accompanied with pain. This increased rapidly until the 14th, when the tumour, having attained the size of a man's head, burst, pouring out a quantity of pus mixed with fœtid sanies. The strangulated and sphacelated parts of the omentum having been separated from the sound, after destroying the hernial sac,

\* We suppose the author means, *sensible to the touch*.

fac, had fallen down into the scrotum, producing inflammation and sup-  
puration sufficient to effect their discharge. The abscess in a few days began  
to heal, and, by simple dressings only, the patient recovered, and is now  
living, without experiencing any inconveniency from what has happened.

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*On the practical Study of Botany, by Means of Chemical  
Analysis: chiefly abridged from the original Papers of  
D. F. S. HERBSTAEDT, &c.*

(Continued from Number I. p. 72—77.)

TABLE SECOND.

*A general View of the SECONDARY ELEMENTS of vegetable Bodies, which  
cannot be exhibited as Objects of Sense, in a separate State.*

1. THE *astringent* principle.—Substances which are supposed to contract  
the animal solids (or according to others, to produce some beneficial  
change in the body, either by stimulating the nerves of the stomach, or  
affecting the mass of the fluids), are, in a *medical sense*, termed *astringents*.  
This definition is, however, very imperfect; inasmuch as by *astringents*  
are more properly meant, *tonics*, or such strengthening remedies as are given  
for the purpose of bracing the elementary fibres of the body, when they are  
perhaps too loosely connected, and of relieving weakness in the system,  
arising, as is conjectured, from want of *tone*, or defect of elasticity in the  
vessels\*.

In a *chemical sense*, which more properly applies to the subject of the  
present inquiry, the *astringent* principle, in general, denotes only that  
property

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\* As the want of cohesion, so frequently observed in the fibres of the human  
body, is probably owing either to a watery consistence, or diminished proportion of  
the animal gluten in the circulating fluids, it is evident, that proper articles of food,  
such as contain this jelly in considerable proportion, afford likewise the most effec-  
tual means of improving the fluids, restoring the losses sustained, and thus invigo-  
rating the whole body. This, however, is a theory much contested, as being the  
grand pillar of what is now, by many, called in derision, '*humoral pathology*.' Without  
deciding on the merits of *humoral*, *nervous*, or (what is the most absurd of any,)  
CHEMICAL PATHOLOGY, we shall only remark, on this occasion, that it is of the  
utmost consequence to the medical practitioner, to determine with critical precision,  
whether the diminished action, as well as the want of cohesion in the fibres, proceed  
from the impaired state of the fluids, and particularly the gluten, or from too great  
extension and subsequent relaxation of the fibres themselves. W.



property inherent in vegetable substances; by which leather is tanned, and a black colour produced, when combined with solutions of iron. This astringent property is most copiously contained in *galls*, and is in every respect analogous to that contained in the Peruvian bark, and many other astringent and bitter vegetables.—The *gallic acid* of SCHEELÉ is not a pure astringent substance, but is combined with a considerable portion of vegetable acid. Its presence may be easily discovered, by making the experiment with a saturated solution of iron, which thus exhibits a black precipitate. This astringent principle is rendered volatile in a warm temperature, without losing the property of striking a black colour.

2. The *colouring* principle.—This is unquestionably connected with a peculiar modification of astringency, as all colouring vegetable substances possess more or less of that property. The origin and phenomena of the different colours, are probably founded on the different degrees of refraction of the rays of light proceeding from the coloured object towards the eye.

3. The *acid*, or pungent principle.—This is of a volatile nature, and may be totally expelled by heat. It is most copiously found in horse-radish, mustard, onions, &c.; but it cannot by any means be exhibited completely pure and free from other ingredients. The very pungent or burning quality of the *fresh* root of the wake-robin (*Arum maculatum*, Linn.), the pellitory of Spain (*Anthemis pyretbrum*, Linn.), especially in a dry state; the mezercon\*, (*Daphne Mezereum*, Linn.); the meadow anemone, (*Anemone pratensis* Linn.) and several other vegetables, is entirely owing to this acid quality.

4. The *narcotic* principle is contained chiefly in those vegetables which, if used in sufficient quantity, have a direct tendency to induce sleep, such as the poppy, the hemlock, and the deadly nightshade. It is of a volatile nature, as is evident from the pernicious exhalations of narcotic substances, when they are exposed to the action of heat. But this deleterious principle is so intimately combined with the basis of gum and soap, that it cannot be exhibited in a separate elementary state.

5. The *bitter* principle.—It has not yet been determined with accuracy, whether a peculiar bitter substance really exists in nature, or whether the  
bitter

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\* The mezercon and anemone have lately been introduced into medicine, on account of their active and remarkable effects on the human system, in cases of lues, scrofula, &c.; but I cannot forbear remarking, with indignation, that the ever-busy London quacks have already seized upon these powerful substances, in order to make them the *essential* agents in their "Botanical Syrups, Vegetable Balsams," &c.; when, in fact, the principal ingredients of their nostrums, consist of the most virulent metallic preparations, such as sugar of lead, the oxydes of copper, mercury, arsenic, &c.

bitter taste of many vegetable bodies is the result of their combination with other constituent parts. Nor has any substance whatever, hitherto, afforded this principle in a free or uncombined state; for, in the chemical analysis of vegetable bodies, we always find it blended with gum, mucilage, or soap.

6. The *odoriferous* principle appears to be most intimately combined with the essential oils of vegetables, expressed or distilled. It has been already remarked, that it is not yet decided by sufficient experiments, whether the odoriferous principle is not residing in some other element, totally different from that of the oil; as many vegetable bodies emit remarkable fragrance without affording any quantity of essential or distilled oil, in proportion to the degree of their odour\*.

TABLE THIRD.

*Simple Vegetable Acids.*

1. The acid of *tartar*, or tartarous acid, which is obtained from some vegetable substances, hereafter to be specified, in a pure state, while in others we find it combined with alkaline salts and earths;—it is frequently blended with other vegetable acids, as well as with the matters of gum and soap. This acid forms rhomboidal crystals, which swell when exposed to the action of a moderate fire, emit the smell of burnt cream of tartar, and at last leave behind a spongy coal in the crucible.

2. The acid of *apples*, or the *malic* acid, is most copiously contained in the juice, both of ripe and unripe apples. SCHEELÉ was certainly the first chemist, who taught us to separate this acid, which so far differs from the acid of tartar, that it does not form crystals, and, if combined with calcareous earth, is more easily soluble than the tartarous acid.

3. The acid of *lemons*, or the *citric acid*, is combined with the malic acid in

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\* We cannot, in this instance, reason from analogy; for some vegetables apparently abounding in oil, yield very little of it, and others none at all; for instance, roses and chamomile flowers, though of a strong and permanent smell, yield but a small quantity of oil; a pound of the former producing no more than from three to four grains of essential oil, and a pound of the latter, about half a drachm, or two scruples. The violet and jessamine flowers, which perfume the air with their odour, are deprived of this agreeable property, by exposing them to a very moderate fire, and do not afford the least particle of oil in distillation, unless immense quantities be at once submitted to this process; while favin, the unpleasant scent of which is perceived at a considerable distance, parts with the largest proportion of oil of almost any known vegetable; inasmuch that one pound of it yields from two to three ounces of essential oil, being the eighth, and sometimes the sixth part of the weight of the plant.

in the juice of lemons, in the sap of gooseberries, as well as in a variety of other fruits, but particularly in the barberry or pimperidge-fruit. It forms lamellated crystals, which possess a more acrid taste than those of the tartareous acid, and which, when combined with magnesia, are easily soluble in water.

4. The acid of *sorrel*, or the *oxalic* acid (formerly called acid of sugar, or saccharine acid,) crystallizes in rhomboidal columns, and is readily exsiccated, or reduced to powder, if exposed to the action of atmospheric air. Its crystals dissolve in water with a peculiar rustling noise, and possess an acrid sour taste.

The acid of *benzoin*, or the benzoic acid, is sufficiently known by the name of *flowers of benzoin*. This substance apparently consists of a basis rather compounded than simple. Besides the concrete resinous juice of benzoin, this acid is also discoverable in the Peruvian balsam, in the watery infusion made of the flowers of cinnamon and cassia, and in a few other vegetables.

6. The acid of *milk*, or the *saccho-lactic* acid, is produced from the sugar of milk, by boiling it with a proportionate quantity of nitric acid. It may likewise be obtained from gum arabic, and the mucilage of tragacanth. This acid appears to be a constituent part of many vegetables, and, on that account, deserves great attention in their chemical analysis.

There are several other vegetable acids usually enumerated by authors, such as the *gallic* acid, which has been stated in the SECOND TABLE, as forming the *astringent principle*; the *pyro-ligneous* acid, formerly termed empyreumatic acid spirit of wood; the *pyro-mucous* acid, otherwise called syrupous acid, or spirit of sugar, honey, &c.—the *pyro-tartarous*, or spirit of tartar; the *succinic*, commonly called acid of amber; and perhaps a few others: but all these now specified, are either modifications of one or other of the preceding six species, or they cannot be strictly called *vegetable acids*; for instance, the *succinic*, or the acid of amber, which is evidently obtained from a bituminous substance, though its vegetable origin can hardly be disputed.

In the preceding three Tables, we have merely enunciated the primary and secondary constituents of vegetable bodies, without attending to the artificial products, to be obtained from them, or to their respective effects on the human body. Before, however, we can attempt to enter upon the discussion of these important objects, it will be useful and necessary to premise a few particulars relative to the *laws*, by which a chemical analysis of vegetable bodies must be conducted, and the views with which it ought to be undertaken.

Although *such* an analysis should not be productive of *immediate* and *extensive* benefit to the chemist, whether considered as a man of science, or a commercial operator, yet it will be admitted, that it is of the utmost consequence,

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### Progress of the Disorder.

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Append of the <sup>*</sup> Organs after Dissection.	



# Rating Table.

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Particular remarks on extraordinary Cases.

quence, and promises great and indubitable advantages to the medical practitioner.

When we endeavour to institute an accurate analysis of vegetable bodies, we should never lose sight of this fundamental proposition, *that every plant is a perfect organic body*. We ought, farther, to direct our constant attention to the following axioms: 1. That organic bodies, in a temperature considerably above the boiling point of water ( $212^{\circ}$  of Fahrenheit, or  $80^{\circ}$  of De Luc), are not decomposed in such a manner as to exhibit their proximate, but rather their remote constituent parts; and 2. That in the re-union of the latter, in different proportions to each other, new chemical products result from the operation;—products which, in this state, formed no elementary principle in the vegetable body. If these circumstances be duly considered, no further proof will be demanded, that the process of analysing such substances in the *dry way* (as hitherto practised by all the ancient and many modern operators, with whom the agency of fire, and the use of an alembic, were the principal and almost only requisites to a chemical laboratory), is in every respect insufficient to discover the true elementary constituents of bodies subject to such analyzation.

According to these premises, the temperature in which the chemical analysis of organic substances is to be performed with success, must never exceed the boiling point of pure water. In order to ascertain this point with a sufficient degree of accuracy (especially as the co-operation of heat is in almost every instance absolutely necessary to effect the decomposition of organic bodies), a vehicle ought to be employed, which is capable of checking any excess of the temperature before stated.

Such a vehicle we find in the purest water. To this substance, if its expansion be not prevented, by confining it in close vessels, and excluding the access of atmospheric air, we can easily communicate the greatest quantity of free *caloric* (matter of heat), without exceeding, in any remarkable degree, the maximum of the temperature it has thus acquired;—provided however, that during the experiments, there be no greater variation in the state of the barometer, than from 29 to 30 inches.

Although the truth of this proposition is now fully established, it will nevertheless be useful, and even necessary, for the information of those who are not thoroughly acquainted with the particulars of the experiments made on this curious subject, to premise a short analytical account of the facts on which it is founded, and by which it is supported:—

If a pound of ice or snow, the natural temperature of which is uniformly  $32^{\circ}$  of Fahrenheit, be mixed with a pound of water, heated to  $172^{\circ}$  of the same scale, it will be found that the mercury in the thermometer plunged into this mixture, even after all the ice or snow has been melted, does not rise higher than  $32^{\circ}$ —so that the temperature of the mixture remains perfectly

equal to that which the ice or snow possessed, previous to the addition of hot water: as the temperature of this, which before was  $172^{\circ}$ , is thus deprived of  $140^{\circ}$  of its heat, and reduced to  $32^{\circ}$ , or the freezing point, the deficient  $140^{\circ}$  of caloric have combined with the ice; and although they have not in the least affected its temperature, they have nevertheless changed its form, and converted it from a concrete into a fluid body. On the strength of this experiment, the following aphorism is incontrovertibly established: *That caloric may unite with bodies in considerable quantity, without producing any change in their temperature; but their forms are, in this combination, necessarily changed.*

If we farther apply this invariable law of physics, in communicating free caloric to water itself, the temperature of which is  $32^{\circ}$ —if a quantity of free caloric be imparted to it, till it acquire the highest degree of heat it is susceptible of, namely, that of  $212^{\circ}$ , we shall then find, that a new relation takes place between the water and the caloric. For, if we attempt to communicate a still greater quantity of caloric to the water already heated to  $212^{\circ}$ , it is no longer susceptible of additional heat, but the caloric enters into a new chemical combination with the water. And if the state of the barometer remain as before stated at  $30^{\circ}$ , and that of the thermometer at  $212^{\circ}$ , a new phenomenon will present itself to the observer: the water will change its form a second time; and it will be converted from the fluid state to that of vapour—in consequence of the caloric having united with the water, and assumed an elastic form. Hence the aphorism already mentioned stands amply confirmed by experience, *that caloric is not capable of raising the temperature of bodies, however their form be changed by its combination with such bodies.*

The late experiments made by Dr. CRAWFORD have satisfactorily taught us, what quantity or proportion of caloric is requisite to unite with boiling water, in order to change it into a state of vapour. This philosopher inquired into the capacity which iron has of uniting with caloric, and found, that the proportion subsisting between iron and water, in this respect, was eight times less in the iron than in the water. He employed, for instance, eight parts of iron filings, heated them to  $300^{\circ}$  of Fahrenheit, and poured to these eight parts of iron, one part of water, heated to  $212^{\circ}$ . He observed that the water was instantly converted into vapour, but the temperature of the vapour, as well as that of the mixture, amounted to  $212^{\circ}$  only; consequently the iron had been deprived of  $88^{\circ}$  of caloric by means of the water; and these ought to have communicated to the water a temperature equal to  $300^{\circ}$ ; but the temperature of the vapour remained equal to  $212^{\circ}$ , and hence we must conclude, that the  $88^{\circ}$  of caloric had actually been fixed by the water, and transformed it into a fluid vapour.

From what has been now advanced, it may be clearly perceived, that pure  
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water is a body perfectly well adapted for the chemical analysis of organic substances, in order to prevent that degree of heat by which their organic structure might be destroyed, or at least decomposed and reduced to the more remote constituent parts; as it cannot be raised to a higher temperature than that of  $212^{\circ}$ , in which vegetable substances suffer no material change in their elementary constituents. As, farther, pure water is a very proper menstruum for the greatest number of those formative principles which are discoverable in vegeto-organic bodies, it is eminently qualified to separate them from other insoluble substances, and to exhibit them in a state, which enables us to prosecute the analytical method of examining their component parts with ultimate success.

(To be continued in our next.)

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*On the Origin and Properties of Liquid Styrax\* ; extracted from a Memoir read to the Medical Society of Paris ; by Citizen BOUILLON LA-GRANGE.*

THE preparation of a medicine can never be made with success, unless the nature of the substance of which the mixture is composed be well understood. In pharmacy, we find a number of chasms of this kind; liquid styrax is one of those subjects, on which different conjectures have been formed, and the nature of which has not hitherto been completely developed.

It is well-known, that liquid styrax has been employed for ages, in a medicament to which it formerly gave its name, but which now is almost entirely abandoned, the *unguentum e styrace*. It is also well-known, that the preparation of this ointment varies according to different authors, and that all of them, for want of having a correct knowledge not only of styrax, but of the manner in which caloric and oils act on resinous substances, have fallen into errors which must, in general, be attended with an imperfect method of preparing certain plaisters and ointments.

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\* "The genuine liquid Styrax is, even at Moco, a very rare commodity, and sold at a very high price, and it has seldom entered the shops of our apothecaries. A resinous juice, possessing somewhat of the same sensible qualities, brought from the Spanish provinces of South America, and perhaps the product of the same tree, is sometimes sold in place of it. But much more frequently what we meet with under this name, is an artificial compound of solid storax, common resin, wine, and oil, beat up together, to a proper consistence. Concerning the real virtues of liquid styrax, observations are altogether wanting, &c."

*New Edinburgh Dispensatory.*

164 *La Grange, on the Origin and Properties of Liquid Styrax.*

Liquid styrax is a resinous juice, called by the Arabians, *Mitia*; by the Turks, *Cotter-miza*; by the Chinese, *Roca malba*; and by the Europeans, false aromatic Storax. This resin is liquid, glutinous, little, or scarcely at all pellucid, of a grey-brown colour, with the strong, but disagreeable smell of solid storax, and of a somewhat pungent aromatic taste; it very seldom, if ever, comes to us in a pure unadulterated state.

A great diversity of opinions prevail relative to the origin of this species of resinous balm; some will have it to be a turpentine, compounded or boiled up with oil, wine, &c.; others maintain, that it is an extract obtained by the decoction of several parts of the amber-tree. It should be observed, however, that JAMES PETTIVER, an apothecary of London, and a skilful naturalist, does not hesitate, in the "*Philosophical Transactions*," No. 313, to declare, that it is the juice of a certain tree, called *Rosa males*, (*Liquid-ambra styraciflua*. Lin.) which grows in the isle of Cobras, in the Red Sea, about three days journey distant from the city of Suez. According to this author, the bark of the tree is peeled off every year; it is afterwards bruised or pounded, and boiled in sea-water to the consistence of glue; then the resinous substance which swims at the top is collected; it is further purified and refined by dissolving it again in sea water, and straining the solution; thus prepared, it is inclosed in separate casks, together with the residuum of the process now described. These two sorts of styrax are then transported to Moco, and exposed to sale at the celebrated Arabian fair.

This perfume, says *Valmont Bonare*, is in great esteem among the Orientals. A cask containing 450 lb. sells at from 180 to 360 pounds of silver, (*livres d'argent*.) according to the purity of the styrax. This naturalist mentions his having seen, in a Turkish vessel, a barrel made of styrax wood, and which, as he was assured, had been formed of the trunk of a tree producing the liquid styrax itself; the barrel was two feet in diameter; the trunk had been hollowed longitudinally, to the thickness or depth of the lower end, the upper end being made of pieces put together: the wood was rather hard, odoriferous, and of a yellowish colour. He was further informed, that the sarcophagi, or mausolea of great men, were generally made of this species of wood.

There is, besides this, another substance to which the name of styrax has been given; it is imported from America, but is in fact the liquid amber.

This is all that relates to the history of styrax, among which the account given by Pettiver, appears to be the most consistent with the chemical analysis of that substance.—As to that which is supposed to be artificially compounded, it is only the product of fraud or avarice; but it is easy to distinguish the true styrax from that which is manufactured.—The following are the physical or sensible properties of the liquid styrax used as an article of commerce: it is of a greenish-grey, the taste rather aromatic, leaving a slight acidity

acidity on the tongue. That which exudes from the tree, not having undergone the boiling process we have before described, and which is called the *true styrax*, is of a deep red colour, of an agreeable smell, approaching to that of the balsam of Peru, the taste pungent, leaving on the tongue a smart impression of acidity; this species is very rare.

The chemical properties of the styrax, which is an object of trade, are too numerous to be inserted here. From the result, however, of its chemical analysis, the following conclusions may be deduced: 1. That styrax is a resinous balm, analogous to styrax, or benzoin; 2. That this substance is composed of benzoic acid and of a resin, and that the other matters found in it, are not naturally a part of its composition; 3. That the most simple and advantageous method of purifying styrax is, to make a tincture of it in highly-rectified spirit of wine, as it may thus be obtained free from all heterogeneous ingredients; 4. That, in order to prepare the ointment of styrax, and in general, all unguents composed in part of resinous substances, they should not be made too hot, particularly styrax, which is easily decomposed by caloric; as this agent very readily absorbs the oxygen, while the benzoic acid is volatilized at a low temperature. And lastly, that there is a very remarkable difference between the ointment prepared with the styrax purified by alcohol, and that purified by the action of heat; the former has an agreeable flavour of styrax, and produces no feculent impurities by its union with other substances; while the latter has a strong, rather disagreeable smell, and always leaves behind a considerable sediment.

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*Chemical Considerations on the Effect of Mordicants, in Dying Cotton Red:—By J. A. CHAPTAL.*

Extracted from his late Memoir read on this Subject, in the National Institute, at Paris.

THE fine red given to cotton, by means of madder, seems to be involved in an uncertainty similar to that prevailing in certain pharmaceutical preparations, the odd and complicated recipes of which have been hitherto respected from an ill-founded notion entertained by the mechanical operators, that the smallest change introduced into the process would destroy the general effect.

A whole month's labour is scarcely sufficient to terminate the different operations thought necessary to obtain the fine Turkey red, called *Adrianople*. For this purpose, a number of different substances are successively employed, soda, oil, gall, sumach, sulphat of alum, blood, madder, soap, the nitro-muriate of tin, &c.

The true method of simplifying this process is not by working at hazard, and attempting, without sufficient guides and experience, a practice different from

from that in common use. Chemistry is now so rapidly advancing in improvements, that all its operations may be reduced to simple principles, which, when once established, will become, in the hands of the artist, what axioms are to the mathematician.

The three principal *mordicants* in dying cotton red, are, *oil*, *galls*, and *alum*. To take the red of madder, cotton should be duly impregnated with oil. This preparation is made by combining oil with a weak solution of soda. The effect of this alkaline lye is merely to dilute, divide, and spread the oil uniformly over all the parts of the cotton. Pot-ash, however, will produce the same effect as the soda, which is an object of some consideration in northern countries, where the latter is scarce and dear, while pot-ash is very common. Yet the soda should be in a caustic state, and contain some of the muriate; this causticity is the effect of its proper calcination.

In the choice of the oil great care should be taken, as well as in that of the soda. The oil used for painting is the most proper; not the finest oil, but that which contains a strong portion of the *extractive principle*. It ought, moreover, to be in excess, that is, not in a state of absolute saturation with the alkali.

When the cotton has been sufficiently impregnated with oil, it is then subjected to the operation of *galling*; here galls are of great service, and cannot be replaced by any other astringent vegetable substances, whatever quantities of them may be employed.

The third mordicant necessary, in the dying of cotton red, is the sulphat of alum. It not only possesses the property of giving a gloss to the red of madder, but it contributes also, by its decomposition, and the fixation of its aluminous base, to give solidity to the colour. To judge of the effects of alum in dying cotton, it may suffice to mix a decoction of galls, with a solution of alum. This mixture instantly becomes turbid, and a greyish precipitate is formed, which, when dried, is insoluble in water and in alkalis.—The solution of alum, however, should not be too hot, as in that case a portion of the astringency obtained from the galls will escape, from the texture of the cotton, and then the decomposition of the alum will take place in the immersion; a circumstance which must necessarily diminish the effect of the mordicant, and contribute to impoverish the colour.

Here then is a combination of three principles, viz. oil, the astringent principle, and the base of alum, which produce the united effects as a mordicant to the red of madder. If separately employed, they will neither be attended with the same fixidity, nor afford a similar gloss and brightness in the colour.

This mordicant is unquestionably the most artificial that is known in dying, and the operation of fixing the red colour in cotton is also the most complicated

cated of all others. It presents to the chemist a species of combination, highly interesting in the prosecution of his studies.

Experience alone is sufficient to conduct us in these numerous operations and experiments: we ought to reason upon them, and calculate both the principle and result of each, without which, the labours of the most experienced operator, far from enabling him to correct errors, and obtain uniform products, will only present a discouraging alteration of successes and failures.

*A Comparative View of the Principal Theories, which have prevailed in Chemistry, &c. By Dr. FRANK, Sen. of Vienna.*

(Continued from Number I. p. 63—70.)

**HEAT** and **Light**\* are, according to modern experiments, the effects of two different simple substances. They act either separately or in combination; in the latter case the result is called fire. Both are originally fluid bodies and provided by nature with the highest degree of expansibility. It is this property which renders them capable of diminishing or suppressing the power of attraction in all other bodies, and transforming them from a solid into a vaporific or elastic state, while they enter with these bodies, into chemical combinations, according to the greater or less affinity, or elective attraction subsisting between them.

*Air* and *Water* are not simple bodies, and therefore do not deserve the name of *elements*, which was given them by *Aristotle*; because both are compounded of parts which can be chemically separated. The *acids* and metallic calces likewise do not belong to the list of elementary substances; such as *carbon*, *sulphur*, *phosphorus*, and the *metals*.

The air of the atmosphere is a compound of two elastic fluids. One of these is not only totally unfit for respiration, but likewise incapable of supporting the flame of combustible bodies. Hence it is called mephitic, suffocating air, or more probably, according to the modern French nomenclature, *Azote* (*gas azotique*); or by the older Chemists, *phlogisticated air*. This irrespirable species of air constitutes about three-fourths of the whole atmosphere, with very little or no variation, in the most opposite climates; it is an element reduced to a gaseous form by the access of caloric, and we meet with it, as a constituent part of all animal and many vegetable bodies.

\* In the doctrine of Light, the author of this essay follows the opinion of Professor *HARNSTADT*, of Berlin, and not that of *LAVOISIER*, who considers Heat and Light modifications of the same substance.



The second constituent element in the composition of the atmosphere, which forms about the fourth part of it, is that which renders it fit for respiration, as well as combustion. This elastic fluid is a very remarkable agent in modern Chemistry, and its presence is discoverable in the greater number of the phenomena which present themselves to the inquirer. Its basis is entirely different from that of azote, and it is found in all organized and many of the mineral bodies: and on account of its property of forming acids, it is now called the *acidifying principle*, or *oxygen*, in an abstract sense; but when it is exhibited to the senses in a gaseous state, it is then termed *oxygenous gas*.

Besides these, there are two other elementary substances, which deserve particular attention in the New System of Chemistry—the *carbon*, or the base of charcoal, and the *hydrogen*, or the base of inflammable air. Both are constituent parts of all organized bodies: the former is the *pure charcoal*, but the latter cannot, independent of its combination with other substances, be exhibited to the senses in any other but an elastic form, after having united with caloric; whence it has received the name of *hydrogenous gas*, or inflammable air.

Combustion can take place only in oxygenous gas, and depends upon a chemical decomposition of this elastic fluid. All bodies of the animal and vegetable kingdoms, sulphur, phosphorous and the different metals, effect this decomposition of oxygen in a high temperature, while they unite with the basis of it in a gaseous state, and disengage the respective matters of heat and light, from which this basis derives its elasticity; so that accordingly as these substances enter into new combinations, the result of such unions is either light or heat.

In the combustion of organized bodies we find, that oxygen is alternately decomposed by carbon and hydrogen, which always exist in them as constituent parts. The latter, *hydrogen*, by its union with *oxygen*, produces water, but which, in the moment of its origin, is most commonly again decomposed into its original constituents by the co-operation of the carbon, and deprived of its oxygen, which, *after having united with it, and formed the carbonic acid (fixed air \*aerial acid)*, escapes in a gaseous form.

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\* Although it appears to have been unconnected with the design of Dr. FRANK, to take notice in this Essay of every individual to whom the science of Chemistry is indebted for its rapid progress; yet we cannot, without injustice, omit to mention in this place, the radically important discoveries of Dr. BLACK of Edinburgh, respecting one of the most interesting airs, now called *carbonic acid*, as well as the sensible and latent properties of *caloric*. These may justly be considered as the  
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The hydrogen thus disengaged, enters into a new combination; this becomes again decomposed, and the alternate combinations and decomposition in which light or heat are evolved, in this manner continue, until all the constituent parts of the combustible body have undergone this process of dissolution; and nothing but the earthy particles, combined with some insoluble and incombustible salts, remain behind.

These phenomena, during the combustion of animal and vegetable substances, however, take place only during the free access of atmospherical air; if this be secluded during the process, the result is very different.—As soon as the powerful agency of heat destroys the combination subsisting between the constituent parts, the hydrogen of the substance under experiment, uniting with oxygen, forms water; which is partly decomposed by the disengaged carbon, partly changed into vapour, together with the carbonic acid and the gaseous hydrogen generated in this process. In the mean time there arises in most vegetable substances, as well as in animal fat, a *new combination of the carbon and hydrogen*, which combination produces an acid by means of the oxygen present. If this latter be almost consumed, a new phenomenon occurs, and instead of an acid, the result is an *oil*, or a combination of *carbon*, and *hydrogen*, with an inconsiderable quantity of oxygen. In animal as well as in many vegetable bodies, on account of the *azote* and *hydrogen* they

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introduction to Dr. FAIRTLER's discoveries, which together with those of *Bergman* and *Scheele*, in Sweden, have unquestionably laid the foundation of all the recent improvements in chemistry.

It would be unpardonable to withhold from these illustrious characters that share of merit and praise to which they possess claims scarcely inferior to those of the French chemists. We principally allude to the original discoveries made by Dr. Black, relative to the well-established properties of *magnesia*, *fixed air*, and *latent heat*. His useful labours, during a long series of years, as a luminous and celebrated lecturer, have crowned him with a degree of success almost unexampled in the annals of science. Perhaps no professor of chemistry ever enjoyed so much honour and satisfaction as has fallen to the lot of Dr. Black: he has educated a greater number of respectable pupils than any public teacher now living; inspired the learned as well as the dilettanti of this country with a just taste for the prosecution of chemical studies; and, upon the whole, he has been essentially instrumental in improving that science, by his excellent method of analytically and experimentally demonstrating chemical truths; a method no less elegant than convincing.—On account of ill health, and the rapid advancement of age, he has lately been obliged to resign his academical chair to his former adjunct, the present ingenious professor HORS; who, from his long residence in Paris, and the habits of intimacy he has cultivated with the most eminent French chemists, is equally zealous and able to establish the antiphlogistic system, in the Edinburgh school, upon a solid and permanent basis.

NUMBER II.

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contain, *ammonia*, or vegetable alkali, is generated instead of an acid;—in other respects, the phenomena are similar to those already stated, with this only difference subsisting between vegetable and animal substances, that the former leave behind carbon deprived of hydrogen and oxygen, together with a few earthy and saline particles; while the latter exhibit a residuum of carbon, combined with the phosphat of lime, or a calx saturated with the phosphoric acid.

In the combustion of *sulphur* and *phosphorus*, we observe phenomena very different from those which present themselves in combustible organized bodies. Sulphur and phosphorus merely attract oxygen; they form in this combination peculiar acids, and thereby disengage the respective elements of heat and light which appear in the form of flame. The acid generated from sulphur and oxygen, if the former be completely saturated with the latter, is termed *sulphuric acid* (*acide sulphurique*); but, if a portion of sulphur still remains unsaturated, it is then called the *sulphurous acid* (*acid sulphureux*); so that the different termination of the last syllable is always used to indicate the degree of saturation in the acid. In a similar manner is obtained from phosphorus, either the *phosphoric* or *phosphorous acid*.

The *calcination* of *metals* is likewise a process of *combustion*. These substances combine with *oxygen*, lose their lustre and cohesion, and in this form are termed *metallic oxyds* (*oxides metalliques*). Some of these, however, such as *arsenic*, *molybdæna*, (black lead and *tungsten*,) are capable of uniting with a larger portion of oxygen, and are convertible into *true acids*.

Hence the products of combustion are *water*, *acids*, and *metallic oxyds*. Their absolute weight is uniformly greater than that of the substance from which they are obtained; because the oxygen, which unites with them, is a ponderous substance. A clear proof of this assertion is the correspondence of the additional weight in the oxyds, with that of the oxygen gas absorbed by the metals.

But the process of combustion is not the only one in which oxygen enters into combination with other substances: the process of respiration; the spontaneous decomposition of metals; electricity; the contact of bodies with those substances to which oxygen is either loosely attached, or in which it exists in an abundant proportion, for instance, the acids; the process of fermentation, &c. all these afford opportunities for the oxygen to form combinations.

In the respiration of animals, the oxygen gas is separated by the lungs; during this admirable process in the animal economy, it partly incorporates with the blood, and partly, with the base of carbon it meets with, forms the carbonic acid, which, together with the portion of azote inspired from the atmosphere, escapes in the subsequent expiration. As, however, the caloric  
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of separated oxygen gas is more than sufficient for reducing the carbonic acid to an elastic form, the surplus of caloric is necessarily communicated to the animal body, which consequently receives its constant supply of heat from the more or less regular evolution of oxygen gas.

Those mineral productions which contain sulphur, as a constituent part of the ores of metals, are subject to spontaneous decomposition. The mechanical part of this simple process is as follows: metallic ores are placed in strata, over one another; water is poured over them, and thus they are exposed, for some length of time, to the influence of the atmosphere, till they acquire a vitriolic taste. The consequent result is, in part, to be ascribed to the decomposition of the water, by the action of the metal, which deprives the former of its oxygen, and disengages the second constituent part of the water, hydrogen, which escapes in a gaseous form; and it partly depends on this circumstance, that the sulphur attracts as much oxygen from the atmosphere, as is necessary for its change into an acid. The product must be a metal, saturated with the sulphuric acid; for instance, the sulphat of iron.

The *acidification of azote* is accomplished by the influence of *electric matter*. This takes place either by the spontaneous effect of atmospheric air, and its natural electricity, on animal and vegetable substances which contain azote in abundance, as is the case in nitre-works; or by means of an artificial process, in which electric sparks are passed through a mixture of azote and oxygen. In both cases the *acid of nitre* arises, which according to the degree of its saturation with oxygen, is either called gaseous oxyd of nitrogen, *nitrous gas*, *nitrous acid* (*gas nitreux*, *acide nitreux*), or if supersaturated with oxygen, *nitric acid* (*acide nitrique*).

By treating or mixing substances with acids, those which have a greater chemical affinity or elective attraction to oxygen, than the basis of the former, viz. the acids, have to the latter, they likewise become oxydated. Such is the case when metals are dissolved in acids. The acid employed is, in this operation, regularly decomposed; the oxygen attaches itself to the metal, and reduces it to the state which it has assumed by combustion, or in other words, it becomes an oxyd. At this period only, the metal is in a proper condition of being received by the remaining undecomposed part of the acid, and a complete solution of it is accomplished. On these occasions, a gaseous substance is always evolved, but of a different nature, in different instances. If the nitric acid be used as a menstruum, the consequent expulsion will be that of nitrous gas; because one part of this acid is deprived of so much oxygen, that the basis of nitre alone—a combination of azote with a small portion of oxygen, remains behind, which, by the free caloric, then present, acquires the elastic form.

In making similar experiments with the *concentrated sulphuric acid*, sul-

phurous gas escapes; on the contrary, hydrogenous gas, when it has been *diluted* with water; and this for the following reason: in the former case, one part of the sulphuric acid parts with much of its oxygen, hence sulphurous acid must be the product; this, however, in the second case, meets in the water a body, from which, on account of its greater power of attraction, it derives as much oxygen as it had been deprived of by the metal; consequently, as the water is composed of oxygen and hydrogen, the latter must naturally become free, and disengage itself in a gaseous form.

*Farina, mucilage, gum, sugar*, are educts, rather than products, which are separated from vegetable bodies, either by the operations of nature, or by simple chemical processes. All these are combinations of *carbon* and *hydrogen*, in different proportions, with a portion of *oxygen*. They readily assume the nature of an acid, particularly when they meet with an opportunity of attracting a large portion of oxygen; on which account, all substances, capable of being converted into acids, are generally termed *acidifiable bases*. This combination with oxygen, may be accomplished, either by employing an acid which contains this element but loosely combined, as for instance, the nitric acid, or by means of fermentation.

The former of these operations is very simple, and consists merely in immersing the acidifiable substance in nitric acid, till such time as red fumes are no longer expelled. The nitric acid is thus completely decomposed; it is deprived of the greatest part of its oxygen, and compelled to escape in the elastic form of nitrous gas. The substance subjected to solution, on the contrary, absorbs its oxygen, and is transformed into an acid.

All *vegetable acids* have similar bases, namely, *carbon* and *hydrogen*. The whole and only difference subsisting between them, depends upon the *relative* and *different* quantity of the oxygen by which they are acidified. The *acetic acid* is the most perfect among them, and all others are, in part, changed into it, by a more perfect saturation with oxygen. Some acids of the vegetable kingdom, however, likewise contain azote and phosphorus; but whether these two are essential ingredients of them, has not yet been ascertained.

If vegetable substances containing farinaceous, mucilaginous, and saccharine ingredients, are exposed to a temperature above  $10^{\circ}$  of Reaumur, or  $54\frac{1}{2}^{\circ}$  of Fahrenheit, the equilibrium subsisting between their constituent parts is thus destroyed. These are now set at liberty to enter into new combinations. A great part of the free carbon unites with oxygen, and escapes as carbonic acid; the hydrogen, however, in combination with another part of carbon and oxygen, produces alcohol, or an inflammable spirit. This is called, in chemical language, the first, or vinous fermentation. Alcohol, being an acidifiable body, then combines not only with the portion of oxygen still existing in the mixture, but it likewise attracts so much of it from the  
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atmosphere, that, after being changed into an acid, it appears in the form of vinegar. These are the limits of the second stage of fermentation. Lastly, in the third stage, hydrogen is disengaged; and, if azote be one of the constituents in the substance under experiment, the product is *ammonia*, which derives its origin from the bases of *hydrogen* and *azote*. These successive productions take place till the whole vegetable body is reduced to its earthy basis, and the more solid insoluble salts. Every organic substance, however, does not exhibit these phenomena, during its fermentation. Several plants afford no alcohol, while animal substances yield neither this nor an acid. Those of the former kind immediately pass over into the acetous, and the latter, into the fetid, or putrefacted fermentation.

In reviewing the different methods by which oxygen forms combinations, it is evident that it is *exclusively this elementary substance* that forms the acids, and transforms or changes all such substances into acids, as are capable of receiving it in considerable quantity. Although the bases of some of the acids, for instance the *muratic*, *fluoric* (*fluor-spathic*), and *coracic*, are hitherto *unknown*, yet reason and analogy entitle us to conclude, with a high degree of probability, that they, like all others, have individual bases which from the oxygen have acquired their acid nature, but which cannot be exhibited in a separate state, because their affinity to oxygen is so great, that they cannot be attached to any other substance. The capacity of the muratic acid to absorb an additional portion of this substance, and to form what is called super-saturated or oxygenated (dephlogisticated) muratic acid, affords an obvious confirmation of this conjecture.

It is further observable, that *metals* assume the form of calces or oxides, only when they enter into combination with oxygen, in that combination alone they belong to the class of *compound* bodies; whereas in their *metallic* state we are unable to decompose them, and therefore must consider them as *simple* bodies. Lastly, it follows that *water* consists of *hydrogen* and *oxygen*, and as such cannot be called a simple body.

But these propositions are not merely synthetically true; they can be verified also by a strict analysis. As oxygen must be necessarily subject to the laws of chemical affinity, all its combinations must be liable to be dissolved, and the respective bodies with which they were formed, to be reduced to their pristine state; as soon as, under the requisite conditions, another body operates upon them, whose elective attraction for oxygen is greater than that which attaches or fixes it to their basis. In most instances, pure carbon is a substance of this nature. In a *high* temperature, by the degree of which the elective attractions in general are very much influenced, carbon deprives the acids of their oxygen, appears in the form of carbonic acid; and completely disengages their bases, for instance, the sulphur, from the sulphuric acid; the

the phosphorous from the phosphoric acid, &c. It *decomposes water*, if it be made to pass over it in the form of vapour conducted through red-hot tubes; combines with the oxygen of it; and thus disengages the hydrogen. It *reduces* the metallic oxides when at the degree of fusion, and restores to them their metallic properties. Some of these oxides, however, those of the *precious metals*, and of *mercury*, do not stand in need of carbon to disengage their oxygen. They readily part with it, in a temperature somewhat higher than that in which they have absorbed it; because in this the affinity of oxygen to caloric is greater than to the basis of the metal; it escapes in the form of oxygenous gas, and may be easily intercepted, inclosed in glass or other air-proof vessels, and exhibited to the senses.

In an analogous manner as bodies in their combination with oxygen acquire additional weight, they, in the contrary case, when disoxygenated, or deprived of their acidity, lose a part of their absolute weight. This loss, however, can be as easily accounted for as the former increase; it originates in the escape of the oxygen, and its relative amount is, in every instance, proportionate to the weight of the latter.

Those readers who have not yet acquired a familiar knowledge of the antiphlogistic system, will be enabled from this short sketch to form, at least, a superficial estimate of its merits. The first and original works, which appeared on this subject, are the two following: 1. "*Opuscles physiques et chimiques, par Lavoisier*:" à Paris; tom. i. ii. 8vo. 1774; and, 2. "*Traité élémentaire de Chimie, par Lavoisier*:" à Paris; 8vo. 1789.

Having now briefly delineated the elements of the modern French system of Chemistry, it remains to state, concisely, the various modifications which this system has lately undergone in Germany, or rather, to sketch an outline of the later systems to which it has given birth.

Professor VOIGT, of Jena, some years ago, published a new chemical theory, which remarkably deviated from the former phlogistic, as well as the present antiphlogistic system\*.

The learned Professor adopts *two* kinds of phlogistic, or *inflammable substances*, viz. *male* and *female*; which, however, are not cognizable by our scales or instruments of mensuration. The former exists in all *combustible* bodies of the animal and vegetable kingdoms, in *sulphur*, *phosphorus*, and the

\* *Versuch einer neuen Theorie, &c. i. e. An attempt towards establishing a new theory of fire, of combustion, of the different gases, of respiration, fermentation, electricity, of the meteors, of light and magnetism*: by Professor Voigt, Jena, 8vo. 1794.

*metals*; it forms with *water* the *male inflammable gas* (inflammable air; hydrogen gas): the latter, when combined with water, exhibits the *female inflammable gas* (pure vital air; oxygen gas), and, as such, constitutes the fourth part of atmospheric air.

The remaining part of the atmosphere (phlogistic air; azote) is an *elementary air*, which cannot be condensed into a fluid vapour; it is neither fit for respiration nor combustion, but is capable of dissolving a variety of substances.

*Light* is an extremely subtle matter, everywhere extended, which however can sensibly affect the eye only, when its parts sustain a violent degree of vibration.

The *acids* are formed by a peculiar *acidifying basis*, which exists in all bodies affording acids, but which is *concealed* in them by means of the male base of inflammability; as, for example, in phosphorus, in sulphur, in the carbon, &c.

In a similar manner, a peculiar *alkaline basis* produces the *alkaline salts*, which, according to its different modifications, are at one time *fixed*, and at another *volatile*.

*Water* is an *elementary* substance, which, indeed, can be *separated*, by means of combustion, from the male and female bases of inflammability, and again combined with these bases, according to particular circumstances, but it cannot be *decomposed* into its constituent parts.

*Carbon* is formed of the *aerial acid*, and the *male basis of inflammability*. The former is a substance that is indebted to the acidifying element for its origin, which *cannot be decomposed*, and which, in its gaseous state, is combined with a portion of water.

The different *earths* we meet with in nature, are modifications of one and the same simple substance, the *basis of earth*.

If an inflammable body come in contact with the female inflammable gas, and if by any species of vibration, for instance by friction, the male inflammable base of the former be kindled, there takes place a *reciprocal action* between the two inflammable bases; they unite; and if this copulation (or, as Professor Voigt expresses himself, this grinding and milling operation of their nuptials be *calmly* accomplished), *heat* or *actively combined inflammable matter*, is the result. And if the reciprocal concussion of the two principles be attended with *violence*, the *matter of heat* is at the same time disengaged, and *fire* is consequently produced.

The inflammable base, thus actively combined, at length passes over into a *calm* state, and is dissolved by the *simple* air of the atmosphere. The product of this solution is called inflammable air (phlogisticated air; azote).

All bodies which are deprived of their male basis of inflammability, acquire

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an addition of weight, and new properties. The acids, for instance those of phosphorus, of sulphur, become free; the metals are reduced to the form of calces. Their male base of inflammability combines with the female, emanated from the female inflammable gas; thus the water of the latter is disengaged, which attaches itself to the body subject to combustion, and must, therefore, necessarily increase its absolute weight.

As soon, however, as such bodies, for instance calciform metals, the phosphoric acid, &c. meet with an opportunity of depriving another substance, such as the carbon, of its male inflammable base, according to the fixed laws of affinity, they again return to their former state, the phosphoric to the phosphorus, the metallic calces to bright metals, &c. The water they have absorbed, combines, in this case, with the carbonic acid, disengaged from the carbon, and escapes in the form of gas. As, however, the water was the only cause of their increased weight, the male principle of inflammability, which they exchanged in return, does not manifest any sensible weight, it is obvious that such bodies must be reduced to that weight which they possessed previous to their combustion.

In an analogous manner, the author adopts the sexual system in the doctrines of electricity and magnetism: he calls the two opposite magnetic poles, as well as the *plus* and *minus* in electricity, by the fanciful terms of *male* and *female*.

Less artfully constructed, more consistent, and incomparably better adapted to explain the phenomena of nature, is the system lately proposed by the celebrated chemist of Prussia, Dr. RICHTER, whose works are well known to the learned of France, as well as of Britain.

(To be continued in our next Number.)

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## HINTS AND IMPROVEMENTS

### IN THE PRACTICE OF

## MEDICINE AND SURGERY.

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*Proposal for improving the Practice of Medicine, by the  
Introduction of Clinical Tables.*

IT is a remark, which cannot be too frequently and seriously repeated, that the greater number of errors and controversies in medical practice have arisen

arisen from the superficial and inaccurate mode of making *clinical observations*. If such were not deplorably the case, the medical world would not at present groan under a burthen of confused descriptions of diseases, and, not unfrequently, misrepresented facts, whether proceeding from the inadvertency or pathological ignorance of the observer.

Much has lately been done in various parts of Europe, to remedy these essential defects, which have hitherto particularly disgraced the French and German schools. While the former are amusing themselves in framing new systems of pathology, founded upon the chemical combination of the elastic fluids, or gases, decomposed in the analysis of animal substances; the latter have adopted the more Hippocratical method of examining the intricate labyrinth of disordered action in the human system, by following the learned BACON's incomparable plan of judging from actual experience only, and proceeding from a sufficient number of particular facts, to form general conclusions, by way of *rational induction*.

From the corresponding accounts respecting the present state of different medical schools in Germany, we can with confidence assert, that the method of inquiry we allude to, especially prevails in the universities of *Jena, Goettingen, Vienna, Bamberg, Wurzburg, &c.* The late publications of DIETZ, GRÜNER, GOTTHARD, and VOGEL, on *Symptomatology*, or the most proper method of examining patients, and ascertaining the causes of disease, have in this respect nearly accomplished a revolution. To gratify the curiosity of the British reader, we have judged it equally necessary and useful, to communicate a specimen of the Table now actually used in most of the hospitals, as well as by many private practitioners in Germany. We shall not attempt to point out the practical advantages of such Tables, if accurately attended to; as the utility of them, in reviewing the progress and symptoms of the disease under treatment is so evident, that it can be doubted and vilified by those only who are either passionately averse to all innovations, or who reject every improvement coming from others, and attended with a degree of trouble and attention.

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*Artificial Musk, in the Hooping Cough.*

PROFESSOR HÜFELAND, of Jena, an eminent and successful practitioner, strongly recommends the use of musk, particularly that which is artificially prepared, in the epidemic hooping cough. He affirms, that this substance, after the proper emetics and resolvents had been premised, possesses the power of volatilizing the more subtle acrimonious humours,

mours\*, and expelling them through the pores of the skin. This remedy, although invented by the celebrated chemist MARGGRAF, many years ago, and sanctioned by the great authorities of VAN SWIETEN, and STOELLER, appears to be little, if at all, known or employed in this country. As it is a medicine comparatively cheap, and easily procured, we shall communicate to our readers the following approved method of preparing it.

Three drachms and a half of concentrated nitric acid are gradually dropped on one drachm of rectified oil of amber, which is previously poured into a wine glass. When this mixture is agitated, it grows hot, and emits offensive fumes, against the inhalation of which the operator must be on his guard. After having stood twenty-four hours, the compound acquires a resinous appearance; at the bottom of it we find a strongly acid fluid, but on the top of it a yellow resin, resembling musk in its fragrance. This resinous matter must be repeatedly washed, first in cold and then in hot water, until the acid taste be completely removed. Thus we obtain a substance which is equal in flavour, as well as in its medicinal properties, to the genuine natural musk, which is perfectly soluble in spirit of wine, which, like other resins, can be precipitated by water, and which always retains the scent acquired by this simple chemical process.

According to Dr. HUFELAND's experience, the artificial musk has been found of eminent service in the hooping cough, as well as in all kinds of nervous diseases. Indeed, the oil of amber combined with the nitric acid, might lead us, *a priori*, to conclude their uncommon efficacy in nervous and spasmodic affections. As this substance is of a waxy and resinous consistence, it is most conveniently administered in the form of emulsions. For this purpose, from ten to twelve grains are triturated in a mortar, with a few almonds, and diluted with five or six ounces of water. Of this mixture, two tea-spoonsful are given every two hours, to a child from one to two years of age, and in a rising proportion to older children. Many patients have received a cure from the use of this remedy and a few occasional emetics, without the aid of any other medicine. It generally produced a sudorific effect, while it obviously diminished and alleviated the fits of coughing; and not unfrequently it was attended with eruptions, which, in many instances, assumed the form of the true nettle-rash; and by this favourable crisis, soon terminated the disease.

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\* We apprehend this assertion will excite a smile in those opponents of *humoral pathology*, who fondly ascribe every inordinate action in the system to some preternatural state of the nervous and muscular fibres.

*New Method of preventing Asphyxia in Children.*

THE *Medico-chirurgical Journal* of Professor TODD, Vol. III. No. III. published in German, at *Copenhagen*, announces an important discovery in the art of midwifery. M. HERHOLDT has found, on opening the bodies of animals still-born, that the cavity of the tympanum is filled with the *liquor amnii* and phlegm (viscous water); that this fluid is ejected after birth through the sinus auditorius, and replaced by atmospheric air. This discovery has induced him to suppose, that the liquor amnii is likewise introduced into the trachea, and fills it so entirely, as to prevent the infant from breathing when born. Experiments made at the Veterinary School have confirmed this hypothesis. Generally, Nature, by her own efforts, discharges this liquor; sometimes, however, she requires the assistance of art. The child cannot respire freely, till it be thus relieved. M. Herholdt is of opinion that this circumstance produces more apparent deaths than is commonly imagined. It is not then enough to rinse the throat of the child, but it ought to be placed in an attitude which facilitates the discharge of the liquor. The author has been so fortunate, in the course of last year, as to restore to life twelve out of thirteen children in this situation. Professors ABILDGAARD and WIBORG have confirmed the experiment, by opening five puppies in embryo.

*Medicines successfully employed in Epilepsy.*

THIS formidable disease, against which innumerable remedies have hitherto been used with little or no success, seems at length, in a considerable variety of instances, to have yielded to medical treatment.

Much as we deprecate the idea of curing diseases arising from *different* causes, by *similar* remedies, we should consider ourselves deficient in candour and justice, were we to withhold communications from the medical public, merely because they are not always derived from *professional* sources, or recommended by high authorities. Such is the case with respect to the first remedy we propose to describe.

There is, at present, a remedy much in vogue on the Continent, particularly in Germany, which is known by the name of '*Ragolo's Epileptic Powders.*' They have been lately analysed by physicians of the first eminence, and prescribed with uncommon success, in several very obstinate cases of epilepsy. This remedy was originally invented by *Meldola*, a Spaniard, who established its celebrity, by curing a Portuguese lady of high rank. In consequence of this event, the Court of Spain enjoined Dr. Ragolo to try its effects;

effects; and, as this mercenary gentleman had not a sufficient share of liberality to make the composition of it known to the public at large, he sold it to a medical person in Germany, of an equally narrow mind, who is now carrying on with it a very lucrative traffic\*.

According to the conjectures of CNOPE, who has chemically analysed Ragolo's powders, and communicated the result in *Baldinger's Magazine*, Vol. xi. p. 232, they consist of a mixture of valerian, orange-peel, sal ammoniac, and cajeput oil. Professor GMELIN, of Gottingen, gives a similar opinion in *Crell's Annals of Chemistry*, No. 12, for 1793; although it is supposed by others, that they are principally composed of the toad-stool (*lycoperdon bovista*, Lin.), valerian, and some other distilled oil; for it is well known, from thirty successful cases mentioned in the '*Universal Literary Gazette of Jena*,' No. 245, for 1793, that the lycoperdon operates almost as a specific in epileptic fits, particularly those arising from sudden dread or terror. The formula in which Drs. Baldinger and Gmelin have prescribed these powders, is nearly as follows: powder of the valerian root, half a drachm; magnesia alba, and sal ammoniac, each six grains; and cajeput oil three drops—to be taken for a dose. To secure the desired effect, we would recommend to add a grain or two of the dust of the lycoperdon to each dose, and gradually to increase the quantity of the last article.

Dr. THIELEMANN, a respectable practitioner in Germany, cured, by means of these powders, in the course of six weeks, a youth who had for three years been afflicted with epileptic fits: and Dr. DOLLÉ likewise, within a few weeks, restored to society a young woman, who for eighteen months, had been subject to attacks of epilepsy. Dr. JAHN, however, another German physician, affirms that he has found them of no service.

Dr. GESENIUS, of Nordhausen, observes in one of his latest publications, that in those cases of epilepsy which arise from acrimonious humours, and a preternatural degree of sensibility and irritability in the nervous system, he has successfully prescribed the mistletoe (*viscus albus*, Lin.). He administers it, as COLBATCH did, in the form of powders, three times a day, half a drachm each dose; at the same time he directs the patient to drink plentifully of an infusion made of four ounces of mistletoe, cut small; a handfull of peony flowers; and two ounces of syrup of peony, or yellow roses.

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\* They are now sold by Mr. Pfluger, of Nuremburg, in small boxes, at the enormous price of THREE GUINEAS each! Thus it appears that we are not singular in suffering a trade to be carried on, which is rather encouraged than opposed, by those who ought to guard the unwary against fraudulent practices, instead of giving such impositions an apparent sanction by public and private documents.

From a letter of Dr. CAPPE, a promising young practitioner at York, addressed to Dr. DUNCAN, jun. of Edinburgh\*, we extract the following facts relative to the internal use of the *nitrate of silver*. Dr. Cappe gave this medicine to a man who had been renewedly attacked with epilepsy soon after his marriage. The effects of it were greater than could reasonably have been expected; as the patient had suffered from the disease for more than twenty-five years. For a long time there had not been an interval of more than ten days between his fits. He began to use the medicine on the day after he had many fits. He took a quarter of a grain thrice a day, and had no fit for a month. After this he enjoined an interval of five weeks; and though the intervals became gradually longer, Dr. Cappe could not ascertain that his fits were less violent.

In the same letter, Dr. Cappe takes notice of a paper read by Dr. SIMS before the Medical Society of London, on the use of the *nitrate of silver in epilepsy*, in which paper Dr. Sims mentions, that it sometimes aggravated the disease at first, though it afterwards effected a complete cure. Dr. Cappe remarks, however, that he had not observed such an effect; though he had seen this substance used, particularly at the Carey-street Dispensary, in London, in many epileptic cases, with more or less advantage.

After having informed us, that he had also prescribed the *nitrate of silver* in one case of *angina pectoris*, in which it removed all the symptoms; in two cases of *dyspnœa*, where it had a powerful and speedy effect; and in one case of *hysteria*, with some apparent benefit. Dr. Cappe accompanies these facts with the following useful remarks: "This medicine, in general, keeps the bowels open; it sometimes produces diarrhœa, but it has not occasioned any painful effect in the cases under my observation, though given in the quantity of half a grain, three times a day. The effect of it (proceeds Dr. Cappe), in the case I have mentioned, cannot, I think, be attributed to its aperient operation: for, in the case of *angina pectoris*, it was frequently necessary to give aloetic pills, to prevent costiveness. No other remedies were employed with the *nitrate of silver*, except in the case of *hysteria*. In this instance it was necessary to unite opium with it, to prevent its purgative effects."

To conclude these important accounts relating to a disease of so obstinate and frequently complicated a nature, we shall only observe, that it appears to us of the first consequence to discover, if possible, the proximate and predisposing causes of epilepsy. The latter are perhaps so hidden in the pathology of the human mind and body, as not to be easily traced to their true source and origin: but the proximate causes have certainly not been hitherto sufficiently

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\* Dr. Duncan's *Annals of Medicine* for 1798, p. 456, and following.

ently attended to. It is well known to experienced practitioners, that the epileptic convulsions, so common in early youth and infancy, not unfrequently proceed from some material stimulus, such as worms in the intestines, and particularly the *tape-worm*, without accounting for it from preternatural irritability, or indirect debility of the muscular or nervous fibres. Several ingenious methods of discovering this worm, which plays so decided a part in the diseases of children, have lately been devised, and not altogether without success. Dr. SACHSE, of Parchim, in the dutchy of Mecklenburg, has observed, that a patient under his treatment for the tape-worm, regularly discharged long pieces of it in the morning, after she had eaten a small quantity of strawberries at night. This lady remarked the same phenomenon to recur a twelve month after she had first taken notice of this singular fact, which seems to claim the attention of practitioners. There is, however, nothing mysterious or extraordinary in this phenomenon. Strawberries, like all other vegetable substances which contain much water\*, evolve large quantities of fixed air, or carbonic acid gas, in the bowels of animals; and, as this species of gas is of a highly deleterious and irrespirable nature, we need not wonder that the eating of strawberries produced this uncommon effect. The want of strawberries, in this instance, might be very effectually supplied by employing the following mixtures; dissolve two drachms of salt of tartar in twelve ounces of water, and dilute four ounces of the acid of lemons in twenty ounces of water; each solution to be kept in separate bottles. Of the former mixture, the patient takes first half a tea-cupful, and immediately after it a whole tea-cupful of the latter. These draughts should be repeated every hour or two, till the tape-worm moves: now it becomes necessary to administer strong cathartics, such as either jalap, scammonium, or aloes, with a proportionate addition of calomel, to accelerate the operation. This method will, in general, be found more certain in expelling that harassing worm than any of the specifics, not even the infusion of carrots, or the powder of the male fern-root, excepted.

The ingenious and successful experiments lately made by Dr. FRICKE, of Brunswick, to discover and destroy the tape-worm by means of electricity, we are obliged, for want of room, to defer to our next Number.

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\* While I was writing this article, a gentleman of sufficient respectability to vouch for the truth of the following fact, informed me, that a poor woman at Islington had preserved two long pieces of a tape-worm, the whole of which was expelled by the use of a simple decoction of carrots in water, which she had drank, for a considerable length of time, in large quantities.

*On the Treatment of inveterate Ulcers.*

THE frequent failure in the attempt of curing ulcers, of the lower extremities in particular, has by many been considered as an opprobrium to the faculty. Those who are unacquainted with the laws of the animal economy, as well as with the difficulties which medical practitioners experience, in ascertaining the origin or cause of diseases among patients of a certain description, will not pass so hasty a judgment.

About six years ago, Mr. FRAHM, a surgeon in the Danish dominions, published a Treatise, in which he recommended the cure of old ulcers of the legs, by exciting an artificial inflammation round the parts affected, by means of turpentine or other stimulating plasters, keeping those parts properly secured by bandages, and the ulcers regularly dressed with simple ointments, till nature, with the assistance of the necessary internal remedies, according to the circumstances of the case, recovers sufficient tone and strength to heal the enlarged ulcers. Another method equally rational has been lately suggested by Mr. BAYNTON, of Bristol, in his "*Descriptive Account of a new Method of treating old Ulcers of the Legs.*" 8vo. Bristol, 1797. He asserts, that the means proposed by him will, in most instances, be found sufficient to accomplish cures in the worst cases, without pain or confinement. After having been repeatedly disappointed in the cure of old ulcers, Mr. Baynton determined on *bringing the edges of such ulcers nearer together by means of slips of adhesive plasters.* To this he was chiefly led, from having frequently observed, that the probability of an ulcer continuing sound, depended much on the size of the cicatrix which remained after the cure appeared to be accomplished; and from well knowing, that the true skin was a much more substantial support and defence, as well as a better covering, than the frail one which is obtained by the assistance of art. But when he had recourse to the adhesive plaster, with a view to lessen the probability of those ulcers breaking out again, he little expected that an application so simple would prove the easiest, most efficacious, and most agreeable means of treating ulcers.

Although the first cases in which Mr. Baynton tried this practice were of an unfavourable nature, yet he had soon the satisfaction to perceive that it occasioned very little pain, and materially accelerated the cure, while the size of the cicatrices were much less than they would have been, had the cures been obtained by any of the common methods.

At first, however, the success was not quite perfect; as in many instances he was not able to remove the slips of plaster, without removing some portion of the adjacent skin, which, by occasioning a new wound, proved a disagreeable



able circumstance, in a part so disposed to inflame and ulcerate, as in the vicinity of an old sore. He therefore endeavoured to obviate that inconvenience by keeping the plaisters and bandages well moistened with spring-water, for some time, before they were removed from the limb. He had soon the satisfaction to observe, that the inconvenience was not only prevented, but that every succeeding case justified the confidence he now began to place in the remedy. He also discovered, that moistening the bandages was attended with advantages which he did not expect: while the parts were wet and cool, the patients were much more comfortable in their sensations, and the surrounding inflammation was sooner removed than he had before observed it to be.

By the mode of treatment here recommended, Mr. Baynton found, that the discharge was lessened, the offensive smell removed, and the pain abated in a very short time. But, besides these advantages, he also found, that the callous edges were in a few days level with the surface of the sore; that the growth of fungus was prevented, and the necessity of applying painful escharotics much lessened, if not entirely done away. Mr. Baynton very properly gives a minute description of the method which he would recommend, of treating such ulcers in their different stages; but, for these useful particulars, we refer the reader to the above-mentioned treatise.

Among the internal remedies that have been lately proposed, and often employed with success by physicians on the Continent, is the extract of the wild hyssop (*gratiola officinalis*, Linn.); by which, according to the account given by Dr. WENDT\*, four persons have been cured of inveterate ulcers of the legs, attended with a discharge of ichorous matter. Dr. Wendt, however, adds, that patients subject to hemorrhages, particularly women during menstruation, ought, under these circumstances, to abstain from the use of this extract; and others of a cachectic disposition, which is generally prevalent in these complaints, should take it at night only; for, if used in the morning, it is apt to occasion violent purging and vomiting. The most proper method of administering it, is that of diluting two drachms of the extract of *gratiola* (which is easily prepared by inspissating a strong decoction of the flowers of the hyssop to the consistence of a thick syrup) with four ounces of water, and directing the patient to take at first one table-spoonful at night, to increase the dose gradually to two table-spoonful; and then to begin likewise to take a spoonful of this draught every morning. In that stage of pulmonary consumption which arises from the absorption of pus from large suppurating ulcers, and the subsequent hectic fever, it is confidently affirmed, that the

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\* Vide his "Accounts of the Progress of the Clinical Institution at Erlang." Number VI. published about the year 1794.

prudent use of the extract of gratiola has frequently afforded unexpected relief, when there was little hope of the patient's recovery.

Although we are no advocates for the application of external remedies in cases of inveterate ulcers, being firmly persuaded that the nature of malignant sores cannot be changed by external applications alone, yet we may be allowed here to speak from our own experience, that a weak solution of the *nitrate of silver*, in the proportion of one grain to two ounces of water, is perhaps the most efficacious lotion that can be recommended with safety, to correct and check the discharge of fetid and putrid sanies from deep-seated ulcers.

Another external remedy in ulcerations of the legs we learn from a late account communicated by Dr. FILTER to Dr. GISENIUS, who has inserted it in his excellent "*Manual of Therapeutics*," 2nd edition, 8vo. Stendal, 1796, in German: and as this remarkable fact is as yet little known in this country, we shall here give a translation of Dr. Filter's report, nearly in his own words: —"I have (says this excellent physician), in two cases of inveterate ulcers of the legs, made use of the *Angustura bark*. The first case was that of a lady who had long passed the period of menstruation, and, for many years, had been afflicted with arthritic pains. The ulcer, which had continued open for several months, and began to extend rapidly, was completely cured by means of frequent fomentation, with a decoction of this bark. In a similar case of a woman, whose menstruation was suppressed, I directed to dust the fetid, ichorous ulcer on the lower part of the thigh with the powder of *Angustura bark*, which not only produced a more favourable pus in the course of a few days, but likewise performed a complete cure within a few weeks; without having prescribed, either in this or in the preceding case, *any internal remedies*, which might have had a particular effect in contributing to the speedy cure of the patients."

To conclude this article, we shall take notice of a work which appeared some time ago on the treatment of ulcers, but which does not mention either the use of *Gratiola* or *Angustura bark*; though, in other respects, it is replete with useful practical remarks, and ingenious theoretical speculations; viz. "*A Prize Essay on the best method of treating inveterate ulcers of the lower extremities* : by F. X. MEZLER, 4to Vienna, 1792." In a future Number we propose to furnish our readers with a concise abstract of this classical treatise.

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*Venereal Chancres cured by Alkalies.*

DR. MITCHELL, of New-York, informs us, in the American "*Medical Repository*," Vol. II. Numb. II. that venereal ulcerations have been removed  
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with surprising quickness, by the local application of the common vegetable fixed alkali, or the carbonate of pot-ash. A successful and conclusive experiment has been made by that ingenious Professor, which (in his own words) "may serve to confirm the doubts of such gentlemen who disbelieve the wonders said to be wrought by the nitric acid, and, at the same time, to give new matter of reflection to those who have ascribed to it something like a specific mode of action.—A gentleman, a few days after impure coition, felt an itching on the præputium, which soon became ulcerated. As soon as the chancre was discovered, it was cauterized with the lunar caustic, and dressed with ointment strongly impregnated with the red precipitate of mercury.

"Notwithstanding repeated dressings, and the strictest observance of cleanliness in all respects, the ulcer continued to spread, and had invaded a considerable space on the prepuce. Finding it yield in no degree to these local applications, recourse was had to mercurial frictions, which were performed by rubbing the blue ointment in considerable quantities on the legs and thighs. Before a salivation came on, the appearance of the ulcer mended, and by degrees it healed. A few days after, the same gentleman having repeated his impure careffes, was troubled with a new chancre, caused, apparently, from fresh poison breaking out near the frænum. Immediately on discovering it, while yet exceeding small, and not larger than to contain a pin's head, it was touched with lunar caustic, and dressed with precipitate ointment, as the former had been; and in a constitution now charged with mercury, it was expected a cure would be easy and expeditious. This, however, was not the case. The chancre continued to enlarge, to inflame, and to become more and more troublesome, inasmuch, that it was apprehended, there would be a necessity for repeating the mercurial friction.

"But before recourse was had again to this tedious and troublesome remedy, it occurred to me, from the *analogy of volatile alkali in curing bites of venomous serpents, and of the fixed alkali and lime in overcoming those acid products of putrefaction, which poison the atmosphere, and induce epidemic distempers*, that it was worth the while to try the effects of an *alkaline application*, to subdue the *virus of syphilis*: accordingly, the ulcerated surface was covered with some deliquescent salt of tartar. On being first applied, it excited severe smarting, which, however, lasted but a short time. It was dressed with lint, and on examining it some hours afterwards, it looked better, and appeared to spread no more; after a second application of pot-ash, the appearance of the ulcer was apparently changed for the better; on a third application, it dried up, healed intirely, and has been well ever since.

"Whether, in this case, the pot-ash operated upon the solids, and introduced

*Substitutes proposed for the Peruvian Bark, in Intermittents.* 187

duced in them a new action, incompatible with the morbid action, or whether it produced its effects by neutralizing the contagious matter on the surface of the sore, are questions which the physiologist may consider and explain at his leisure. This experiment shows, at least, that there is nothing specific in the action, either of mercury or of nitrous acid, or venereal ulcers. Abundance of instances of chancres cured by alkali, have since occurred in the new New-York Hospital.

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*Substitutes proposed for the Peruvian Bark, in Intermittents.*

OF the almost innumerable remedies which have, from time to time, been introduced and again relinquished, in the cure of intermittents, the bark is the only one which has now, for upwards of a century, maintained its well merited reputation. It cannot, however, be denied that there are many other valuable substances in nature, which, if they were properly and cautiously employed, would answer a similar purpose, and prevent the necessity of sending for this expensive foreign drug, as well as the frequent abuses to which it is now exposed, from its having among the vulgar acquired the character of a specific in agues, and from its indiscreet and promiscuous administration in every case of intermittent fevers, and to every patient, even although it appear to agree with the stomach. That much mischief may be and is daily done, in this respect, we shall endeavour clearly to prove in a future essay on this interesting subject. Let it suffice, at present, to point out those remedies which, since the time that Dr. FOWLER first recommended solutions of arsenic in regular practice, have been employed with success by other respectable practitioners.

The first and most conspicuous of these, the avens root (*geum urbanum* Linn.) which according to the experiment of Dr. VOSEL (resident physician at Ratzeburg in Germany, physician to his Britannic Majesty, and son of the great nosologist), has lately cured three quartan agues, by directing half a drachm of the powder of this root to be taken, every hour through the day, and half a drachm of the Peruvian bark, with six grains of calomel, in the morning. Thus, the most obstinate quartans, which had resisted the united virtues of the bark and other powerful febrifuges, yielded to the operation of the geum and calomel, *without exciting salivation*. It further deserves to be remarked, that the geum urbanum had long been employed by the country people in the vicinity of Eksjoe, in Denmark, before its effects were ascertained in regular practice.

The frequent and successful experiments made with this root, place the efficacy of it, in intermittents, beyond a shadow of doubt. It possesses great

fresh, and in an unadulterated state; that it does not, like the bark, induce oppression of the stomach, obstipation, &c.; that the first dose is generally sufficient to cure the ague, so that the second and third seldom become necessary; and lastly, that the paroxysms of the fever, suppressed by it, rarely, if ever, return.

The immediate effect of this plant is manifestly on the organs of digestion, the intestinal canal, and the kidneys; hence it is an object to which the practitioner ought to direct his principal attention, to take an accurate and comprehensive view of the particular constitution of his patient.

From the evacuating, diuretic, and alterative powers of the datisca, we may reasonably expect to derive considerable benefit in those diseases, where such changes are indicated. Although the root is the bitterest part of this plant, it is not the most active, as the less bitter seeds are far preferable.

The next substitute for the bark in agues, in point of efficacy and celebrity, is the bark of the willow, of which we shall mention six species, together with their respective virtues, according to the *comparative experiments* made with them and the Peruvian bark, particularly by Dr. Gunz, an accurate chemist in Germany. The *salix alba* contains as many volatile and gummy parts as the red bark, but less than the common pale bark; on the contrary, it contains more resinous and less earthy particles than either: in the *salix pretandra*, the proportion of the former is greater, that of the latter smaller, than in both species of the Peruvian; the *salix fragilis* has more volatile parts than the red, and less than the common bark, but less earthy, and more gummy and resinous parts than either; the *salix caprea* exhibits more resinous and less earthy parts than either, but as many gummy as the red, and less of these than the common bark; the *salix vitellina* yields more resin and less earth than either, the same quantity of gum as the common, and more than the red bark; the *salix amygdalina*, more gum and resin, but less earth than either, more volatile parts than the common, and not less than the red bark.

In such cases, therefore, where, according to the doctrines of humoral pathology, the fluids require to be inspissated, the bile improved, and the vital powers raised, the bark of the *salix vitellina* and *alba* is, according to the experience of Dr. Gunz, much preferable to the other species. The *salix fragilis* he particularly recommends for external applications; and of the same opinion is Dr. LOFFLER, in "*RICHTER'S Chirurgical Library*," Vol. VII. p. 789, where this species of bark is uniformly recommended in preference to the Peruvian. The same physician has, with great advantage, employed this substance, in the year 1772, in a malignant epidemic fever of a putrid form, then prevailing. In hæmorrhages, he observed all kinds of the willow bark to produce salutary effects. In cases of nervous debility, induced

induced by excessive indulgence in venery, he found the *salix vitellina* the most efficacious; in involuntary discharges of semen, fluor albus, and against worms, the *salix amygdalina* was the most powerful; when administered in the form of extract in the two first diseases, and in substance as an excellent anthelmintic.

Lastly, the *bark of mabogany*, in powder, has been strongly recommended on the authority of Dr. LIND, of Jamaica, as a valuable febrifuge, which has likewise been occasionally prescribed by physicians in this country with pretty general success. Dr. MICHAELIS, of Leipzig; Professor LODER, of Jena; and Mr. BUCHHOLZ, a respectable mineralogist, all have, in their several writings, confirmed the remarkable antifebrile virtues of this cheap substance, when used in powder, and in the same proportions as the Peruvian bark.

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*A singular Case of Dropsy, after the Repulsion of the Itch,  
cured by Sulphur.*

FROM an account communicated by a physician of Worms, in Germany, to Professor LODER, of Jena, the editor of "*The Journal of Surgery, Midwifery, and Medical Jurisprudence*," Vol. II. Number I. we learn the following curious fact, which has been further corroborated by the experience of Professor HUFELAND, who considers this case as conveying a decisive information of the truth contained in the old doctrine of the *metastases*, or the translation of morbid humours from one part of the body to another.

A strong lusty woman, who had long dabbled in various quack medicines, reputed among the vulgar as specifics in dropsy, was at length obliged to submit to the operation of paracentesis, which had been frequently repeated, with no lasting success. As she had formerly been troubled with the itch, which was cured by the use of sulphurated ointments, she was directed to take sulphur internally. The itch again made its appearance, and an inflamed tumour, of the size of a dollar, began to settle in the region of the navel. This tumour at last burst, and evacuated no less than forty-eight pints (*Schoppen*, in Germany), of a fetid and putrid sanies. Several such evacuations succeeded, so that the whole of them is stated to amount to the enormous and almost incredible number of 484 pints!!! The itch at the same time became violent, and the patient gradually recovered. Gentle reader! it is certainly invidious to *doubt* facts, but sometimes equally difficult to *believe* them.

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Mr. KAUFER, a respectable surgeon of Naugardt, in Pomerania, having observed that tubercles of the lungs generally arose from arthritic matter, and that sulphurated waters have frequently been administered with remarkable success in the *gout*, has lately made the following ingenious proposal. He advises consumptive patients, whose lungs are supposed to be affected with tubercles, constantly to breathe the atmosphere of such rooms, particularly in hospitals, as are inhabited by no other but pforic patients, or those who use *fulphur* internally; so that the vapours arising from the decomposition of that substance in the animal body may have immediate access to the lungs.—We sincerely wish, that this apparently well-founded conjecture may not be lost to the medical world; as fulphur cannot be given to phthical patients with safety, by the organs of digestion.

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## MEDICAL AND PHYSICAL INTELLIGENCE,

(Original and Selected.)

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A WORK of the first rank has just made its appearance in Germany, whether we consider the importance of the subject, the celebrity of the two authors, whose observations are detailed in it, or the real excellence of its interesting contents. It is intitled, "*A Treatise on the Faculty of the Mind to conquer the Sensations produced by Diseases, by Means of the simple Act of the Will.*" This is the production of the venerable philosopher KANT; it is published by HUFELAND, and accompanied with notes by that respectable physician; so that we have before us the joint labours of two great men, on the most useful of all arts, that of *prolonging life*. So valuable and interesting a treatise demands more particular notice, and we shall endeavour to give the substance of it in the next Number of this Journal.

Professor TOBE of Copenhagen, has lately published, at Leipzig, an *Analysis* of a German book, intitled, "*Preliminaries of a Medical Peace, or Points of Union between Brown and his Opponents,*" which analysis, he prefaces with the following severe remarks.

"I merely announce this book, without determining its price. I am more than ever convinced, that we ought not to lay hold of, or examine, an apple of discord thrown upon the ground. I have always thought, that the Brunonian system contains several truths which are not new, and several novelties that are not true. We have no right to blame those who demand proofs in confirmation of Brown's assertion, illustrated by cases of patients, and who pay no attention to theories unsupported by experience. It is undoubtedly disgraceful to the school of medicine in Germany, that such an author, of very little estimation in his own country, should actually produce

produce a revolution, and that so many medical men think that they have hitherto been enveloped in complete ignorance, until it pleased Providence to raise up this precious instrument, to reveal medical truths. I, too, once imagined, that I had discovered the path of truth, but the young people, who ought certainly to have some understanding, raised such loud clamours, that I found it necessary to remain silent. The system of Brown, in the mean time, has opened an inexhaustible mine to the book-makers. To what a multiplicity of *explanations, commentaries, critiques, and apologies*, has it given birth; and behold, at length, the *preliminaries of peace*, not concluded by plenipotentiaries, but conceived in the head of an anonymous dreamer! Instead of examining the Brunonian system (and above all, where he pretends to have made a discovery of a truth), instead of citing the real discoverer, who had formerly laid down what Brown takes advantage of, instead of criticising rigorously the great number of false precepts which originate with Brown himself, the author appears to believe, and perhaps does believe, that the fancies of this visionary are applicable to practice; and hence, instead of peace, we shall only have *Brunonianism corrected and purified.*"

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The female Citizen ADRIENNE LIQUIERE, a pupil of the *Anti-Cæsarean School* of Citizen SACOMBE, at Paris, defended on the 19th of December last, a public thesis on the mechanism of child-birth, for which she was honoured with a prize-medal. Her thesis is divided into five sections, in which the fair author, with much acuteness and ability, endeavours, 1. To explain the *three* situations of the child in the uterus, and to prove that the third of these situations constitutes what is called *insensible labour*; the phenomenon which takes place during insensible labour, being a pathognomic symptom of the last stage of pregnancy: 2. To demonstrate *geometrically*, that the mechanism of child-birth consists in the spiral, rotary motion of the body of the child on its axis, at the moment when it clears its narrow passage, and the cavity of the small pelvis:—3. To determine the delivery by the head, the feet, the knees, and the buttocks; and to prove that the *thousand and one* positions, which the Cæsarean accoucheurs absurdly assign to the child in the uterus, ought to be reduced to *four*; the delivery by the knees or buttocks being merely modifications of that by the feet:—4. To support her doctrine against all objections that may arise against it:—and 5. To prove that her learned friend, Professor Sacombe, was the first discoverer of the spiral, rotary motion of the child in the uterus; and that two modern authors, the elder BAUDELOQUE and HAMILTON, who have availed themselves of this discovery, are only plagiarists.

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It is a fact already known, that *urine* contains phosphorus and several saline combinations with the phosphoric acid. Citizens FOURCROY and VAUQUELIN have lately discovered, in this liquid, the base of alum and phosphat of magnesia. They observed, that a particular animal matter, which characterises urine, and from which it acquires all its properties, quickly forms ammoniac; whence it ought to be classed among the triple salts; it being, in that state, considerably less soluble than before, and capable of being precipitated in a lamellated form, or crystalline needles. These two chemists have ascertained the different alterations of which this liquid is susceptible; they have enumerated the spontaneous changes



to which it is subject, and shewn that the investigation which they have only begun, is an object deservingly engaging the attention of physicians; inasmuch, as it may be the means of solving one of the most important problems in the animal economy of man, both in a healthy and diseased state.

MR. TENNANT formerly announced, that the *arbitric concretions* analysed by him, were a combination of the lithic acid and soda. This remarkable fact has been confirmed by a recent experiment made by Citizens Fourcroy and Vauquelin. They lately received from Citizen VEAU, of Launay, a physician of Tours, one of the concretions that spontaneously separated from a gouty tumour of the fingers of a man whose joints were much deformed by the disease, and his fingers swelled to an enormous size. They submitted this concrete substance to chemical analysis, and found it to consist of the lithat of soda, now called the *urat of soda*, mixed with a considerable quantity of animal matter.

The observations of Citizen BAUME, relative to the decomposition of the *calcareous muriate of lime*, as connected with the inquiries into the nature of a malady, called by physicians the *black*, or *atrabilary disease*, of which Cit. PORTAL has developed the causes and effects, by pointing out the remedies to be employed in the cure of it—have engaged the attention of the Class of Physical Sciences, in the National Institute of France. We hope, in a future Number, to be enabled to furnish our readers with the result of this interesting inquiry.

FOURCROY has recently published, in the '*Annales de Chimie*,' a Memoir containing his observations on the experiments made by the celebrated English chemist MAYOW, who about a century ago discovered many chemical truths, that bear a very striking resemblance to those lately demonstrated by the French chemists. The works of this philosopher, says Fourcroy, were first brought into general notice by the edition of them published by Dr. BEDDOES, in 1790. Of this learned 'Memoir,' we propose to give a more particular account in our next Number. Let it suffice, for the present, to remark, that although Fourcroy does great justice to Mayow, whose merits and talents he admits to be greater than those of his contemporaries, yet he is of opinion, that Mayow did not sufficiently pursue and demonstrate the principles of which he was the author; and that, in fact, he was not fully sensible of the importance of these discoveries, far less of the extent to which they might be carried. In short, Mayow only conjectured what the conclusive results, together with the luminous and scientific doctrines of modern chemistry, have reduced to mathematical certainty.

In the Italian Annals of Chemistry we meet with a letter from Dr. CARADORI to Citizen DUPRE, expressing some doubts as to the solidity of the New System of Chemistry. The Doctor declares, that he cannot yet admit the *ensemble* of the new doctrine, but only some evident facts, or points demonstrated. He thinks that the combination of oxygen, during combustion, can hardly act a principal part in this operation, but must be accessory and foreign; the base of this gas having only a proper tendency (independent of the affinity or action which determines the combustion) to unite itself to bodies deprived of a portion of their phlogistic, carbonic, or any other principle of inflammability, by a considerable elevation of temperature.

perature. This combination might be made in a manner similar to that of water with alkali and caustic lime.

Neither has the composition of water, according to Carrodori, been satisfactorily proved, on which the whole edifice of LAVOISIER principally depends: the inflammable air obtained, is furnished by the body which serves to decompose the water, and not by that liquid. "The Italians will always object," says he, "that you *suppose* what requires to be *demonstrated*." If electricity decomposes water, why should not fire also decompose it? Nor is the experiment of the recomposition of water any more approved of by this author. The residuum, which he supposes always to remain after the condensation of the two gases, gives room to object, that all water was dissolved in air, and only adhered to the elastic state, by the æriform residuum, and some other incoercible element.

The author might adduce other facts, such as those which demonstrate the existence of an inflammable principle in certain combustible bodies, for example, sulphur; but, to use his own words, "*he declines these means of defence, having arms more than sufficient to combat the French errors.*"

Elements coercible, which give to water the form and nature of as many different gases as we are acquainted with; an *inflammable principle*, carbon, hydrogen, or phlogiston, which is a matter of no consequence, and which quits combustible substances according to the temperature somewhat elevated; these, say the French chemists in reply, are the well-proved things which Dr. Carradori puts in place of the most notorious facts, on which the structure of the new chemistry is founded.

The French National Institute have paid particular attention to the learned foreigners sent to Paris by their allies, to assist in the operations relative to a general uniformity of weights and measures. They are admitted to the private sittings of the institute, as well as to its library, and each of them has lately received elegant presents, particularly a highly embellished copy of DIDOT's magnificent edition of Virgil. One of these foreign literary characters, however, Mr. BRUGGS, from Denmark, has unfortunately given much offence; for it is alleged, that in his correspondence with Copenhagen, he has said every thing derogatory to the dignity of the institute, and represented it in very odious colours.

BRUGNATELLI has just published a discourse on *Light*, which he considers in *three different modifications*; namely, light chemically combined; light simply aggregated, but in a latent state; and light sensibly aggregated. The first of these is not to be separated from a body, but by the effect of elective attraction. Oxygenous gas, phosphorus, sulphur, &c. contain it in that state.

It appears from a number of experiments, made with great accuracy by Citizen BRUGNATELLI, on the means of producing detonatory fulminations, by phosphorus combined with different bodies, that, 1. The nitrate of silver, both crystallized and melted, fulminates when struck with phosphorus, even at a low temperature, and that all the salts of silver do not fulminate in the same manner, nor with the same degree of violence; 2. That the greatest number of metallic nitrates fulminate with phosphorus. 3. That common nitre detonates with phosphorus alone, although the fulminating property of nitre was known only by mixing it with several combustible bodies, and elevating it to a certain temperature, or by placing it

into contact with an inflamed body, as gunpowder, or other fulminating powders; 4. That those salts which contain no nitre in their composition, are not fulminating; 5. That the oxygenated muriates of pot-ash, silver, and mercury, fulminate with phosphorus; but the two last more feebly than many other salts; 6. That salts are not the only bodies which fulminate with phosphorus, some metallic oxydes possessing the same property; 7. That phosphorus is likewise not the only acidifiable and solid combustible body capable of producing fulminations, charcoal being attended with a similar effect, at a more elevated temperature; 8. That the bodies fulminating with phosphorus produce no such phenomenon when plunged into the oxygenated muriatic acid in a liquid state; neither do they fulminate, when exposed, jointly with phosphorus, to a high temperature. The stroke of the hammer is necessary to put in oscillation the component parts of bodies, in order to determine their affinities with a sufficient degree of accuracy. These inferences are deduced from the author's experiments, fourteen in number, which he concludes with an observation, that the oxygenated muriate of pot-ash, is well known to produce effects superior to nitre mixed with charcoal and sulphur, and converted into gunpowder; and that it detonates by percussion or trituration, with a great number of combustible substances; but that he did not expect effects much more considerable in using simple nitrates, and even metallic calces mingled with phosphorus, and struck with a hammer.

The uncommon degree of cold, which prevailed at Paris on a particular day of last winter, has given Citizens VAUQUELIN and FOURCROY an opportunity of repeating the experiments formerly made by Prof. LOWITZ of Peterburg, for producing artificial cold; the *decimal thermometer* stood, on that day, at  $17^{\circ}$  or  $13^{\circ}$  and six tenths of Réaumur. When this new thermometer was at  $70^{\circ}$  below the freezing point, they mixed eight parts of the muriate of lime, and six parts of snow loosely gathered. This mixture immediately generated an incalculable degree of cold; 20 pounds of quicksilver were completely frozen into a solid mass in half a minute, as well as spirits of wine, ether, the basis of vinegar, &c. On dipping the tip of the finger into this mixture, it lost all sense of feeling within four minutes, became as white as paper, and did not recover its sensation till held for some time in the mouth. At the first moment of immersion, an acute pain was felt in the finger, as if violently compressed in a vice. This artificial cold may be estimated at 40 degrees.

Two posthumous volumes of interesting chemical tracts, by the celebrated PIERRE BAYEN\*, have just been published at Paris, by his nephew Citizen Malatret; of which we intend, in a future Number, to give a detailed account. In the mean time we shall mention only that, among other valuable dissertations, these tracts contain analysis of the mineral waters of Luchon, accompanied with a number of chemical experiments; a picturesque description of the valley and springs of Luchon; an examination

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\* Bayen, late member of the National Institute in the Section of Chemistry, was born in 1725, at Chalons, in the department of Marne. He died after a painful and lingering illness, which he bore with uncommon fortitude for twelve years, in the month of Fluvioise, in the sixth year of the French Republic (January, 1798), at the advanced age of 72.—The French have lost in him a virtuous Citizen, and an excellent practical Chemist.

of the saline efflorescences found near the mineral sources of the ancient Roman baths; an analysis of the mercurial syrup of Belet; an investigation of a mine of sphatic iron (*minera ferri alba sphathi formis*); and an analytical account of different stones and marbles;—all which subjects are treated in a manner worthy of the great reputation of the deceased author.

In the 83d Number of the "*Annales de Chimie*," we find a memoir by Citizen PROUST, on the chemical combinations of tin, which the author has published as a supplement to PELLETIER's investigations, relative to the different degrees of oxygenation of which that metal is susceptible in a state of solution by acids.

Citizen Proust agrees with BERGMAN's observations, that tin oxydated *ad minimum*, acquires only thirty parts in the hundred, and still contains some portion of the muriatic acid. If made red hot in the crucible, it parts with the muriate of tin in a gaseous form: and when the tin is oxydated *ad maximum*, it requires forty parts in the hundred, but it may be easily reduced to thirty; and then it is of a bluish colour, and insoluble in acids. The author concludes his memoir by saying, that although Pelletier made no mention of the muriate of white copper, he is fully persuaded, that this chemist was acquainted with the fact, from his having passed over the desoxydation of that metal by tin, in a manner which shewed his intentions to resume the subject on a future occasion. But, while he does every justice to Pelletier, he affirms, in a manner carrying conviction, that although his operations coincided with those of his friend, they were originally contrived by himself.

In the National Institute of France, Citizen LHERETIER has presented the class of physical science with two species of plants; the one discovered at Madagascar by Citizen BRUGIERE in the course of his voyage round the world, and which the Institute has termed *Bruguiera*, in memory of their associate; the other, discovered by the same learned naturalist in the Isle of France, belongs to the family of orchis, and to which Lheretier proposes to give the name of *Rhizodendrum*. It is a species of acachia, originally a native of North America, and is called by Vauquelin *Robinia Viscosa*, from the glutinous matter which gathers on its surface. This substance much resembles that of resins properly so called, excepting that it is with difficulty soluble in alcohol, particularly when cold. Ether in its true solvent, and the result is a solution of pale green. In separating the ether when cold, the matter is extracted which forms the epidermis of the Robinia; it has neither flavour nor sensible smell; is extremely glutinous; is easily softened by the heat of the fingers, to which it closely adheres; swells when burnt, and leaves behind a portion of coal. It readily unites with fat and oil, but not with alkalis, and hardly with alcohol; on being exposed to the air, it does not dry like common resins. On account of these properties, Citizen Vauquelin considers this as a new vegetable production, which affords an unusual proportion of resinous matter.

A new work of the first consequence to the naturalist and botanist, will soon be published at Leipzig—the splendid *Flora Americana Septentrionalis*, by C. L. HUTTNER, of Philadelphia, who avails himself of this great *Book-fair*, to introduce to the learned of Europe this joint production of science and art. The drawings are made from nature, and a number of finished plates are already executed by the celebrated artist Eckstein, formerly Painter and Engraver to the Duke of Mecklenburg. The colouring of the plates is intrusted

intrusted to no other but professional botanists. Upon the whole, this work will unquestionably be the chief production of art, from the western Continent. Mr. Hunter announces in the *Jana Gazette*, that he hopes to be able to transmit the first numbers to Germany early in the spring. They will contain either non-descripts, or such plants as have hitherto been but imperfectly described.

Citizen DESFONTAINES has supplied an important desideratum in the science of Botany, by the complete *Flora of Mount Atlas*, a work of uncommon merit, which has very lately made its appearance at Paris.

Citizen BROUSSONET; whose zeal for science has led him to travel into various parts of Africa, has just published an accurate account of the process employed, at Fez and Tetuan, for preparing goat-skins, in making Morocco of different colours; together with correct descriptions of the plants used in Barbary for manufacturing this valuable article.

Mr. SNYD, of Belmont in Staffordshire, has communicated to the Society for the encouragement of the Arts, &c. a method of preserving the seeds of plants, in a state fit for vegetation, by keeping or sending them surrounded either by raisins or brown moist sugar; which, upon a comparative trial, he found much preferable to packing them in absorbent paper; in the former case, the seeds were found fresh and healthy, while in the latter, there was a prevailing dryness, and they were infested by insects.

The ingenious Mr. FORSYTH, his Majesty's gardener at Kensington, has lately discovered, and liberally communicated to the public, an effectual remedy for destroying an insect, which has within these few years appeared in the British orchards, and threatens destruction to the apple-tree. These minute and imperceptible insects are lodged, in millions, in white efflorescences formed upon the trees, and not unlike those which may sometimes be seen on stones in the field. The following is Mr. Forsyth's composition, which has the additional merit, that it is cheap and easily procured. To any optional quantity of human urine, add as much cow-dung and lime as will reduce the whole to the consistence of common paint: with this mixture the infected trees must be anointed about the latter end of March; and this simple precaution will fully answer the desired effect.

Citizen LAMARCK, in a memoir respecting the new classification of shells, lately read before the National Institute of France, has judiciously pointed out the necessity of increasing the number of genera, and more accurately ascertaining the characters which distinguish these fanciful productions of nature. He extends their number to one hundred and seventeen, whereas Linnaeus and other naturalists have never exceeded sixty. This improvement of Lamarck will greatly facilitate the acquisition of scientific knowledge, in that amusing branch of natural history.

A gentleman of Long-Island, in America, has lately discovered there a new variety of iron-ore of the argillaceous kind. Walking on his farm, and observing the various mineral productions under his feet, he took notice of a small spot which had the appearance of being paved with stones of a regular figure. On taking up some of them, he found their structure the same with the common argillaceous iron-stone which lay scattered about in rude lumps,

lumps, but their shape was nearly pentagonal. They were about four inches long, and stood perpendicular, close to each other, in a stiff loam: in some, four sides only were to be traced. The number of these stones was thirty-six, evidently formed from a solid circular mass of argillaceous iron-ore of about two feet five inches in breadth, and four inches in thickness in the central parts, and becoming thinner towards the edges. In the natural fracture of the stone, the piece had separated in these regular forms, much resembling basalt; and like basalt, though figured, they were not crystallised, but as completely terrigenous and opaque as any argillaceous iron-ore. These specimens go very far towards deciding the dispute, if any doubt still remain, of the igneous or aqueous origin of basalt. They support by the most powerful evidence the latter doctrine; as they cannot be supposed to be a volcanic production—the American gentleman agreeing in opinion with BERTMAN, WEIDMAN, and KIRWAN, that most, if not all basaltic columns, have been formed by crystallization.

A committee of the *Medical Society of New-York*, consisting of Messrs. TILLERY, ROGERS, and MITCHELL, were chosen at a meeting of that body, lately held for the express purpose of investigating the *origin, cause, and prevention of the pestilential distempers*, which for some years past have so terribly afflicted New-York, and other cities and towns of the United States. We hope, the report of the committee will shortly appear; and as they have been promised the aid of the Municipality, as well as of the Health office, their means of procuring information will be greatly facilitated, and thus an opportunity offered of laying before their fellow-citizens a much wanted statement of facts, to elucidate the true nature of the yellow fever.

There is at present a considerable controversy at Paris, on the subject of *Inoculation for the small-pox*. From the great mortality which lately prevailed, when that disorder was contagious, several writers endeavour to persuade government to prohibit inoculation, at least within the precincts of towns. The advocates for inoculation, on the other hand, contend, that such an interdiction would be similar to the *arrets* of the old Parliament, against emetics, and indeed against inoculation itself—*arrets* which so much disgraced France. They deny that the contagion has become more frequent since the practice of inoculation, while the disease itself has thus been rendered less virulent and fatal; and they add, that were inoculation to become universal, it would be the means of extirpating the disorder, as no person would remain liable to infection.

In the mean time, the *cow-pox*, which has of late been the subject of much discussion in this country, has also attracted the attention of the French physicians. In the *Decade Philosophique* of the 10th Ventôse (20th February), we meet with a particular account of Dr. JENNER's treatise on this subject. The French reviewer confines himself to an analysis of Dr. Jenner's work, and does not attempt to give a conclusive opinion on the question now at issue before the public. He however justly remarks, that if the inoculation for the cow-pox prevent the infection of the small-pox, the author who promotes so beneficial a practice, instead of being reprobated for the propagation of a new contagious malady, renders an essential service to mankind.

Dr. BRERA, Professor of the Practice of Medicine in the University of Pavia, lately announced a work intitled, '*Ratio medendi, qua in clinico instituto Ticinensi,*

*Ticinensi, ab initio mensis Decembris, 1796, ad finem usque Junii, 1797, usus est, &c.* Having, however, considered, that were this work to appear in the Latin language only, its practical utility would be much confined, the Professor has judiciously determined to publish a translation from the original manuscript in the vernacular language of Italy.

In this work, the author proposes particularly to place in a more conspicuous light the *Brunonian Theory of Medicine*; to inquire into its merits; to refute, by actual observation, those points which rest upon erroneous principles, and to illustrate others which have a practical tendency. The whole work is to be divided into two parts, each of which will form one folio volume, embellished with four plates, by the celebrated engraver Anderloni.

Of this splendid work Messrs. ORELL, FUSSLER, and Co. at Zurich, have advertised a German translation, to be conducted under the immediate superintendence of the author, who has likewise agreed to furnish them with impressions from the original plates. We trust that this country will not be long without a translation of so valuable a work.

Among other translations of useful Medical books, from the English into the German language, Dr. MICHAELIS, of Leipzig, has lately announced a correct version of Dr. GEORGE FORDYCE's original and classical work, intitled, "*A Third Dissertation on Fever, Part. I. containing the history and method of treatment of a regular continued Fever.*" The two former Dissertations, by the same author, and likewise translated by Dr. Michaelis, were received in Germany with universal approbation.

The *Physical Journal*, formerly conducted by the celebrated Professor Gren, who died of a nervous fever, on the 26th of November last, at Halle, in his 30th year, will be continued under the new title of *Annals of Physics*, by Professor GILBERT, of the same University, who has undertaken the office of editor. Two numbers of this excellent work have already appeared, and Mr. Gilbert hopes to be enabled to furnish a number every month, but the particular time for its publication is not specified.

The second volume of the "*System of Pharmacology*," begun by the late Professor Gren, will be completed from the materials found after his demise, by two of his learned friends, who, by a public advertisement in the Literary Gazette of Jena, have pledged themselves to publish this volume in October next.

Dr. KOELNER, a clergyman of Gotha, has lately published a German translation of the "*Chemico-physiological Essays*," originally written in Latin, by J. Mayow, in 1681. This translation is embellished with six engravings, and accompanied with a learned historico-critical preface, from the pen of Dr. Scherer, Counsellor of mines to the Duke of Saxe-Weimar. Dr. Scherer also proposes shortly to publish his own Commentary on the works of Mayow.

Mr. ACHARD, of Berlin, has made several experiments, with a view to determine the effects of electricity on the fermentation of vegetable substances, and the corruption of dead animal bodies. From the result of his inquiries it clearly follows, that electricity is a remarkable agent in these processes of nature, as it has an obvious tendency to accelerate both; and that the sudden putrefaction of flesh, whether raw or dressed, must be ascribed solely to the  
more

more abundant accumulation of electric matter at that time. Mr. Achard has also discovered, by experiments, that in a body of atmospheric air, confined in a Leyden flask, and electrified as strongly as possible, neither absorption nor dilation had taken place; and that the same was the case when he exposed the jar to abundance of sparks: from which it appears, that the quality of the air is not changed by electricity, or that the electric matter must pass through the interstices of the air, without causing any separation of its component parts.

The ABBE SPALLANZANI has lately discovered a spring of fresh water, which rises through the salt water, in the Mediterranean sea, at the distance of sixty-five feet from the shore, about a mile from Spezzia. It is about twenty feet in diameter, and thirty-eight and an half in depth. The water at the surface is not fresh, but somewhat less salt than that by which it is surrounded. By means of a medicine invented for the purpose, Spallanzani ascertained that at the bottom it is perfectly fresh, but exceedingly torbid and slimy. This phenomenon the Abbé considers to proceed from two small streams, which flow down a hill in the neighbourhood of Spezzia; and, after being united, throw themselves into an unfathomable abyss, from which the water forces its way through the earth, and furnishes nourishment to the fountain that rises in the sea.—Since writing this article, we learn that the world has lost this eminent philosopher.

In the new transactions of the Royal Society of Goettingen, we meet with some curious and interesting observations and experiments, made by Professor BECKMAN, on *staining wood*. A piece of plane tree, put into pounded dragons-blood, mixed with oil of turpentine, and placed over the fire, in a glass vessel, acquired in a short time a beautiful mahogany colour. The wood, when stained, can be easily freed from the dragons-blood adhering to it, by means of rectified spirits of wine.—Gamboge, dissolved in spirit of turpentine, gave the surface of a small piece of wood a shining golden yellow colour, except the fibres and veins, which inclined rather to red. A piece of pear-tree in the same solution acquired a darker colour, somewhat approaching to green, and in part became nearly of an olive colour: different colours may, therefore, be obtained by using different kinds of wood.—One part of dragons-blood, two parts of gamboge, gave to the wood of the plane-tree and beech, a remarkable variety of dyes.

The same dyes had nearly a similar effect on the wood, when prepared in spirit of wine. When they were merely dissolved in spirit of wine, the extract was not sufficiently strong; it was necessary to boil it over a slow fire, till nearly evaporated, but the colour is never so bright as that produced by means of an oil. The professor also enumerates various experiments with dissolved salts and metals, which have been successfully made, but as these are already described by MACQUEEN, we think it unnecessary to transcribe them.

As the subject of typhus-contagion, and its hitherto inexplicable effects on the animal frame, are involved in so much darkness and uncertainty, that it forms, and will perhaps ever continue to form, one of the most interesting problems to the chemist and physiologist, we announce with satisfaction a work which, we understand, is ready for the press, and will be published without delay; it is intitled, "*Observations deduced from facts and experiments, tending to evince the non-existence of typhus-contagion: interspersed with remarks*"

NUMBER II.

X—Y

on



on animal life, and on those laws by which it is governed: by JOHN FRANKS, navy surgeon, and member of the Corporation of Surgeons of London:

The author is of opinion, that the debilitating effect produced on the animal machine, by the operation of *fear*, occasioned by the influence which this invisible, undefined *something* has obtained, is the only contagion which we have to guard against; and that every circumstance of a febrile state may be very satisfactorily accounted for, without having recourse to contagion as a cause of disease. He further observes, that besides the difference of opinion which prevails respecting the *nature of contagion*, the evidence of its reality is very defective, and that we are not even possessed of a correct definition of this invisible and incoercible agent.

Mr. WHITE, a respectable practitioner of Manchester, is preparing for the press a highly interesting anatomical work, which, we understand, is in considerable forwardness, and will shortly be published by DILLY, London. From the accounts we have been able to obtain, this work is chiefly devoted to *comparative anatomy*. It will form one quarto volume, embellished with elegant engravings; and be entitled, *A Treatise on the Gradation of Man*.

The *Physical Society of Guy's Hospital* have proposed the following prize questions for the year 1799:

*In Medicine*:—What is the origin of the cow-pox, and in what does it differ from the small-pox? Are its effects on the human constitution milder than those of the inoculated small-pox—and is a patient, who has been inoculated for the cow-pox, and experienced its constitutional effects, equally secure from the contagion of the small-pox?

*In Physiology*:—How do the vegetable and mineral poisons act upon the body—and what are the best means of preventing their deleterious effects?

Dissertations in answer to the questions proposed, must be delivered to the librarian, previous to the first Saturday in December, 1799. According to the established laws of the Society, a motto shall be prefixed to each dissertation, and with it must be delivered a sealed packet with the same motto on the outside, and with the author's name on the inside. Two sets of books, value five guineas each, are annually given to the authors of the two best dissertations on the subjects proposed.

The two questions for last year were as follow: 1. What is the cause of intermittent fever—and what are the best means of curing it? 2. What is the proximate cause of inflammation? We understand that the successful candidate in answering both questions of last year, was Dr. WARWICK, of Rotherham, Yorkshire.

## CRITICAL RETROSPECT

OF

## MEDICAL AND PHYSICAL LITERATURE.

[FOREIGN AND DOMESTIC.]

### NATURAL HISTORY AND BOTANY.

*Tableau élémentaire d'histoire naturelle des animaux: i. e. "An elementary view of the Natural History of Animals;"* by Citizen CUVIER. One Volume 8vo. with fourteen plates. Paris, Baudouin.

In this popular and instructive work, the author treats successively of the physical

physical history of man, the mammalia, birds, reptiles, fishes, insects, and zoophytes. He explains and compares the varieties and modifications of the principal organs of animals, in as clear and satisfactory a manner as our present knowledge of Physiology and Natural History will admit. The different colour and temperature of animal blood forms an additional and highly interesting object of Cit. Cuvier's able inquiries: hence he classes them under the various heads of animals with red blood and white blood; and again divides them into those having warm and red blood, and those of cold and red blood.

In the course of his researches, Cit. Cuvier has observed in the leech red blood, not that which it sucks, and which would be contained in the intestinal canal, where it is immediately altered, but a real nourishing fluid contained in the vessels, and circulating there by means of an alternate movement of the systole and diastole. These vessels form four principal trunks, two of which are lateral, the third dorsal, and the last ventral. The two former are of an order different from the two latter; but the author has not yet been able to determine which are the arterial, and which the venal. The two lateral vessels proceed from one end of the body to the other, and are joined by branches, which form a very beautiful tissue when injected. The ventral and dorsal vessels do not form a tissue of the like kind. They only throw out branches disposed alternately in an oblique direction, and subdivided in the usual manner. The second is placed exactly under this medullary cord of the ganglions, from which all the nerves proceed. It is impossible to open a leech, without producing a great effusion of that blood. Enough however remains in the vessels to be distinguished. Its colour is almost the same as that of the arterial blood of the frog.

The whole of this original work is treated in a manner by no means derogatory to the fame of this author, who is already known to us as an excellent naturalist.

*Histoire Naturelle des Poissons*, &c. i. e. "*The Natural History of Fishes*;" by Citizen LACÉPÈDE, 4to. and likewise 12mo. Paris, Plasse.

This is, perhaps, the best work upon the subject that has ever been published, and may be considered as a valuable continuation of *Buffon*. It is written in a manner equally pleasing and instructive. The most interesting section of the book is that, in which the ingenious author considers the distinctive character between fishes and other animals, namely, their cold red blood, their having no lungs, and respiring through the gills. After having ably commented upon these particulars, he treats of 'the senses of fishes, the most perfect of which is that of smell, then the sight, and next to it, hearing; touch and taste being the most imperfect of their sensitive faculties. On the whole, he ranks them towards the middle of the scale, for ascertaining the degree of sensibility in such beings as are provided with organs of sense.

Cit. Lacépède further examines the respective degrees of re-production, the swimming power, the mode of nourishment, sleeping, and the social qualities of these animals: he concludes this part of the work by giving an account of the prevalent diseases among fishes, their frequently prodigious size, their utility, &c. In describing that astonishing animal the *torpedo*, the author satisfactorily illustrates the extraordinary effects, which the person attempting to seize it experiences on the arms;—when treating of the *shark*, he furnishes us with an animating picture of that voracious monster.

Throughout this classical work, the author is highly instructive, particularly on subjects where he endeavours to diffuse scientific knowledge; correct in his definitions and details; accurate in classing objects; luminous in the

explanation of causes producing the phenomena of nature; intersting in painting habits and peculiarities; and his language is truly sublime when he demonstrates the difference subsisting between the various species of fishes, as well as the characteristic distinction prevailing between them and other animals.

*Tableau des Systèmes de Botanique, &c.—A View of the Systems of Botany, general and particular; the Principles on which they are founded: together with an Explanation of the Sexual System of Linnæus.* By MOUTON FONTENILLE. 8vo. Lyons, Reyman.

The title-page of this work affords a sufficient idea of its contents. We do not recollect that we possess in the English language a book of a similar nature, and equal merit. The two 'Memoirs' which the author has subjoined to this work, are not the least interesting part of it: the first contains a detailed account of experiments on various methods of drying plants, and their preservation in herbals; in the second we meet with observations on the different kinds and species of vegetables, peculiar to the calcareous and granite mountains in the vicinity of Grenoble. The whole reflects honour on the industry and abilities of the author, and will be read with satisfaction by the botanist, as well as the naturalist.

*Plantæ novæ, &c.—A Description of new Plants which grow wild in Spain, or are cultivated in the Gardens of that Kingdom.* By D. A. CAVANILLES. Folio. Vol. I. and II. Madrid.

The first volume of this magnificent collection contains 110 plates, among which we meet with representations of several new species of plants; the second is embellished only with 34 plates, but they exhibit mostly new, rare, and valuable plants, natives either of Spain or Mexico. The descriptions appear to be critically accurate, and relate to the stalk, leaves, flowers, calyx, corolla, stamina, buds, fruit, and seed of each plant; they particularize the places where it grows naturally, and by artificial culture, whether it is an annual or perennial plant; the time of its flowering; including many useful and interesting observations. Nothing, indeed, seems to be omitted, which could contribute to render this national work, the first of its kind in Spain, a complete history of the different plants therein enumerated.

*Plantæ raræ du Royaume de Naples.—The scarce Plants of the Kingdom of Naples.* By DOMINIQUE CYRILLI; 2 Numb. Folio. Naples.

This is an uncommonly elegant and learned work. The language, although not strictly classical, is generally correct; the descriptions are clear and satisfactory; and many of the plants described are equally curious and interesting: among these we take particular notice of the *brassica fruticulosa*, which grows on the dry sea-sands near Naples; the *allium trifoliatum*, a species hitherto unknown; the *allium speciosum*, and the *allium ciliatum*, of which two last species he gives the history, together with their botanical characters.

The second number concludes with a plant, which the author terms *arundo ampelodesmon*; it is a species of the calamus, frequently found on the coast of Naples and Sicily: and Mr. Cyrilli assures us, that this vegetable promises incalculable advantages to the agriculturist, the mariner, and the artist. Each number of this collection is accompanied with twelve well-engraved plates.

#### CHEMISTRY AND NATURAL PHILOSOPHY.

*Cours élémentaire de chimie théorique et pratique, &c.—An elementary View of the Theory and Practice of Chemistry, according to the new Nomenclature; together*

together with the more useful and entertaining Experiments made in this Science." By Cit. ALYON, Officer of Health in the Military Hospital of Val-de-grace, 2 volumes 8vo. 1798—99. Paris, Published by the Author.

The contents of this excellent treatise fully correspond to the professions of its title, and it is written in a plain and perspicuous style. Although it is chiefly designed for the use of the tyro; it well deserves to be recommended also to the attentive perusal of the practical chemist, as it abounds not only in new and original experiments, but likewise in chemical preparations, the various processes of which had not hitherto been published. Among other medicinal articles, the author gives directions for preparing an oxygenated ointment (*pomade oxygénée*), by the successful application of which he has obtained considerable celebrity, among the Parisians, in the cure of lues venerea.

*Elements of Chemistry*: by JOSEPH FRANCIS JACQUIN, Professor of Chemistry and Botany, at Vienna; Fellow of the Linnæan Society of London, and Member of several Academies of Science, Agriculture, &c. Translated from the German, 8vo. 428 pp. with Preface, Table of Contents, &c. with a Plate representing Woulé's Apparatus for Compound Distillation. London; Murray and Highley. Edinburgh; W. Mudie, 1799, 7s. 6d.

From the advertisement prefixed to this volume, we learn that it is translated by a Mr. HENRY STUTZER; who, at the same time, informs us, that these Elements were originally written with a view to convey to the young student a knowledge of the most important truths in chemistry. We agree with the translator, that this work is written by Mr. Jacquin, "with accuracy and simplicity:" we further allow him the merit of having done complete justice to the original, as the language, in general, appears to be correct and perspicuous: but we cannot persuade ourselves, that the author has made choice of the best and most advantageous form to convey scientific truths to the novice in chemistry, for whom this elementary work is professedly designed. *Aphorisms*, in our opinion, are not calculated to afford a well-connected or systematic view of a science, particularly if subjective truths are to be demonstrated by reasoning upon experiments, for the corroboration of which we avail ourselves of hypothetical premises. Such was formerly the case with the *phlogistic theory*, and in many points is still so with the present *antiphlogistic system*. Both admit a certain *substratum*; and whether this be in every case *demonstrable*, or not, the theory must be supported.

In justice, however, to Professor Jacquin, it must be confessed, that his explanations are concise, and, in most instances, satisfactory. The work is divided into four principal sections, although the running number of paragraphs, amounting to 1122, is carried through the whole book; a circumstance which gives it rather an antiquated appearance. In the first section, after a short and apposite *Introduction*, the learned author treats: 1. Of Chemical solution; 11. Of chemical affinities; 111. Of caloric, or the matter of heat; 1v. Of the matter of light; v. Of the atmosphere; and vi. Of water.

In the next division of the work, the author discusses the "*mineral kingdom*," the subjects of which are carried on from section vii. to section lxxxix; or from page 53 to 234.

The third part is devoted to the "*vegetable kingdom*," which extends from section xc. to cxvi; or from page 235 to 302.

The last division contains the "*animal kingdom*," from section cxvii. to cxlvi; or from page 302 to 372.—The author then concludes the work with

206 *Dr. Smith on Nitrous Vapour—Dr. Currie on the Yellow Fever.*

with an "Outline of the Plogistic System," from page 373 to 381; and an accurate "Description of Woulfe's Apparatus for Compound Distillation," from page 382 to 405; which is accompanied with a neatly engraved plate, representing the different vessels used in that process.

The translator, lastly, has provided this interesting work with a useful alphabetical index.

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MEDICINE AND SURGERY.

*The effect of the Nitrous Vapour, in preventing and destroying Contagion, ascertained from a variety of trials, made chiefly by Surgeons of His Majesty's Navy, in Prisons, Hospitals, and on board of Ships: with an Introduction respecting the nature of the Contagion which gives rise to the Jail or Hospital Fever; and the various methods formerly employed to prevent or destroy this:* By JAMES CARMICHAEL SMITH, M.D. F.R.S. Fellow of the Royal College of Physicians, and Physician Extraordinary to His Majesty. 8vo. 231. pp. London; Johnson. Price 5s.

In an explanatory preface, the author informs us, that the experiments made with the nitrous fumigation, during the last three years, or since the time when he published an account of it, have proved, in the clearest and most unequivocal manner, to every unbiassed mind, not only the power of the nitrous vapour in destroying contagion, but the safety with which it might be used.

The introduction, from page 1 to 48, contains those general observations on the jail and other putrid contagions, with the usual means of obviating these, formerly published in the '*Treatise on the Fever at Winchester*,' and now republished, from a wish to make them more generally known. The principal part of this work consists, 1. of a '*Report of the Experiment for stopping the progress of contagion, as executed on board the Union Hospital-ship at Sheerness; by Mr. Arch. Menzies*;' from page 49 to 114—and 2. of a Collection of Letters by Messrs. Paterfon, M'Grigor, Hill, Griffin, Glegg, Magennis, Snipe, Blatberwick, Brown, and Drew, surgeons of different ships and hospitals; a letter from Capt. Lane, Farnham; extracts from Letters or Journals of Surgeons of the Navy, transmitted to the board of Sick and Hurt; and the correspondence between Drs. Withering, Duncan, Percival, and the Authors relative to this subject.

*Memoirs of the Yellow Fever, which prevailed in Philadelphia and other parts of the United States of America in the Summer and Autumn of the present Year, 1798; including Tables of the Weather, &c.* By WILLIAM CURRIE, S. C. M. P. author of an Historical Account of the Climates and Diseases of the United States, &c. &c. 8vo. 145 pp. Philadelphia, Dobson.

This pamphlet contains a collection of facts truly valuable to every medical practitioner; but the author has been at no pains to arrange them. He begins his work with a sketch of the weather from January to July, 1798, and opens this melancholy budget of disease and death, with the first of August, when the first case of yellow fever occurred, which proved fatal on the 4th. He then proceeds, in chronological order, with detailing new cases, addresses to the public by magistrates and physicians, new methods of treatment, number of deaths, and occasionally too accounts of robberies committed, &c. The month of September is likewise prefaced with a Table of the Weather, together

ther with daily returns of the sick and the deaths in that month. A gloomy picture indeed! as, in the city of Philadelphia alone, not less than 3446 persons fell victims to this malignant epidemic, between the 1st of August and 3d of November!

Dr. Currie endeavours to prove, by a great number of concurrent circumstances, that the contagion, which gave origin to the late epidemic, was imported in the ship *Deborah*, which arrived at Philadelphia, from Jeremie, on the 18th of July last. He further quotes the opinion of the College of Physicians of that city, who agree with him, that the yellow fever is derived from imported contagion, and who, for this opinion, assign the following among other reasons:

"The disease in question 'say the college,' is essentially different from the fevers that occur in this climate, and which originate from domestic causes. It also differs from them essentially, in the circumstance of being contagious; a bilious fever originating from domestic causes, having never been to our knowledge contagious in this climate."

*An Outline of the History and Cure of Fevers, endemic and contagious; more expressly the contagious Fever of Jails, Ships, and Hospitals; the concentrated endemic, vulgarly called the Yellow Fever of the West Indies; To which is added, an explanation of the principles of military discipline and economy; with a scheme of medical arrangement for armies.* By ROBERT JACKSON, M. D. 8vo. 396 pp. Edinburgh, Mundell and Son; London, Longman, Murray and Highley. Price Seven Shillings.

In an advertisement prefixed to this work, the author modestly mentions the opportunities he has had of making medical observations, since the year 1774, as an army surgeon, first in Jamaica, and afterwards in America, where he had opportunities of observing very extensively the different forms and degrees of fever, in the southern states. In the year 1795, he was again ordered to the West Indies—to the island of St. Domingo, where the duty assigned to him afforded the means of examining the appearance of things, at different posts, and in different districts, more fully than fell to the lot of any other person on the medical staff of that island. As a considerable portion of this work consists of valuable and interesting matter, together with many original remarks and observations, we propose to furnish our readers with a concise abstract of its practical information, in a future number; as the room allotted to this 'Retrospect' does not admit of extensive quotations.

*Account of Diseases in an Eastern District of London, from the 20th of February to the 20th of March.*

ACUTE DISEASES.		No. of Cases.	
	No. of Cases.		No. of Cases.
Typhus Gravior	4	Dyspnœa	12
Typhus Mitior	3	Cough and Dyspnœa	10
Peripneumonia Notha	7	Hoarseness	4
Hæctica	2	Hæmoptoe	2
Ophthalmia	1	Phthisis Pulmonalis	3
Acute Rheumatism	3	Anasarca	3
		Ascites	2
		Hydrothorax	2
		Cephalagia	7
		Vertigo	3
		Epilepsia	1
CHRONIC DISEASES.			Ophthalmia
Cough	71		

	No. of Cases.		No. of Cases.
Ophthalmia	- - 5	Hysteria	- - - 3
Gastrodynia	- - - 3	Hypochondriasis	- - - 4
Enterodynia	- - - 5	Chronic Rheumatism	- - 15
Diarrhœa	- - - 30	Lumbago	- - - 3
Diarrhœa biliosa	- - - 12	Sciatica	- - - 2
Lienteria	- - - 3		
Dysentery	- - - 2	PUERPERAL DISEASES.	
Amenorrhœa	- - - 5	Ephemera	- - - 2
Fluor albus	- - - 6	Menorrhagia Lochialis	- 3
Chlorosis	- - - 3	Mastodynia	- - - 4
Cancer in utero	- - - 1	Rhagas Papillæ	- - 3
Enuresis	- - - 2		
Dysuria	- - - 5	INFANTILE DISEASES.	
Hæmorrhoids	- - - 4	Ophthalmia	- - - 4
Hernia	- - - 2	Ophthalmia purulenta	- 3
Tremor	- - - 1	Tinea	- - - 2

Since the last report, diseases of the pneumonic kind, both of the acute and chronic species, have been less frequent than in the former months; the return of easterly and north-easterly winds has, however, prolonged the duration of the chronic species of these diseases.

Disorders of the bowels have been very frequent, and, in some instances, very tedious and obstinate. They have appeared in various forms, but principally in that of *diarrhœa*. The peristaltic motion of the intestinal canal has been increased to a morbid degree, and very frequent discharges of the contents of the bowels have taken place. These discharges have been different in their quantity and consistence, and attended with a variety of symptoms in different patients. Flatulence and borborygmi have preceded them in some instances, whilst in others they have been preceded and accompanied with a considerable degree of pain. Tenesmus and small discharges of a bloody and mucous appearance occurred, in some cases, towards the close of the disease. These symptoms, however, occurred without any primary fever, and the disease might be distinguished from dysentery by this circumstance, as well as by the discharge of fæces, which seldom takes place in the latter disease. In some of the instances referred to in the list, the discharges were so frequent and hasty, that aliment passed through the intestines in an undigested form, which circumstance served to characterise that species of the disease, called *lienteria*.

Some of the patients were affected by nausea and vomiting, and most of them experienced a reduction of strength, and a considerable degree of emaciation.

This disease, when confined within due bounds, often proves beneficial to the constitution, and if not checked in too early a stage, will generally terminate very favourably; but the early use of astringents, to stop the discharge, of opiates to relieve pain, or of warm and stimulating remedies to support the strength of the patient, are always injurious; and sometimes produce the most fatal symptoms.

THE  
*Medical and Physical Journal.*

VOL. I.]

MAY, 1799.

[NO. III.]

*History of the Inoculation for the Cow-pox.*

[Continued from page 120 of our last.]

THE annexed plate requires no other explanation than what is contained in the relation of the case which refers to it; page 118 to 120 of No. II.

As we had wished to lay before the public an impartial unadorned case of cow-pox, just as it might impress an anxious and attentive parent, and just as described by him from notes made during its daily progress, we think ourselves peculiarly happy in having all the desiderata united in one individual instance. The plain and simple description and relation of a person unconnected with the profession of medicine, must be far more satisfactory to the public, than any case selected for the occasion by a practitioner, who might wish to recommend the new inoculation.

The appearance and degree of severity of the cow-pox when produced by inoculation, agrees with Mr. WALKER's account in about 97 cases in 100, of those inoculated in London and its neighbourhood. In a very few instances, however, during the last six weeks, an *eruption* has taken place over the whole body, which, by a cursory observer, might have been mistaken for the small-pox. We have seen some of these cases; the *first* of which was inoculated with matter taken from the cow; the *second* with matter taken from the first. Each of these children had a numerous eruption, but were in no danger. The *third* and *fourth* were inoculated with matter taken from the second, and had an eruption, but much slighter than the first or second. If it ever should become a question, which is not improbable, whether the cow-pox, by repetition in the human subject, may not degenerate into the small-pox, it may then be necessary to point out the distinction which subsisted between the two diseases, when the former was first introduced as a preventative of the latter. At present we shall only add, that Dr. JENNER's second volume has been expected every day of the last week; and that a work on this subject by Dr. WOODVILLE, who appears to have inoculated a far greater number of patients than any other practitioner, will appear in the first week of May.

April 28.

NUMBER III.

Z

T. B.

A Case



*A Case of the Diabetes Mellitus, which terminated in a complete and, as far as can be judged from apparent circumstances, a permanent Cure, by Medicines, abstracting Oxygen from the System, and a Diet consisting totally of Animal Matter :—By R. REDFEARN, M.D. of Lynn Regis, Norfolk.*

AFTER perusing the first edition of Dr. ROLLO's publication on the Diabetes Mellitus, in two volumes octavo, printed by Dilly, Mr. SPERGING, a respectable farmer at Docking in this county, came to consult me, about the beginning of the year 1798, in a case of this disorder, which he had laboured under for near two years before that time. Previous to his application for advice to me, he had consulted Dr. M. of this town, and also Dr. L. of Norwich, both of them gentlemen of eminence in their profession, without experiencing the least alleviation of his complaint. Upon Mr. Spurg- ing's applying to me, it instantly occurred to my mind, that the nature of his disorder would afford a fair opportunity of trying the method recommended by Dr. Rollo, for treating this obstinate and troublesome disease. I there- fore immediately suggested to him the propriety, and the absolute necessity of abstaining rigidly from all fermented liquors and vegetables, with every thing else that could impart oxygen to the system by the primæ viæ; and at the same time ordered that his diet should consist principally of fat beef pork; and such aliments as were of a gross or unctuous quality, and most likely to produce hydrogen in the greatest abundance. My patient, de- fected by a long and painful affliction, and extremely anxious to recover, complied with every prescription, whether in a dietic or medicinal point of view; with the strictest care and attention, declaring that the most nauseous medicines could not shake his resolution from persevering in any course of physic or regimen, which might be adopted towards his recovery. Deeply affected by his sufferings, and desirous of contributing to his relief, I began with prescribing to him, when thirsty to drink very weak brandy and wa- ter, with ten or twelve drops of the hepatised ammonia, a bottle of which he was furnished with, prepared as directed by Mr. CAUICKSHANK, in Dr. Rollo's publication. This he was desired to augment gradually, as his stomach became habituated to its stimulus; and the following medicines administered :—

R/	Pulveris cinchonæ rub	—	—	unc. i.
	Aluminis usti	—	—	drachm. iij.
	Kali preparati	—	—	drachm. ij.
	Petrolei sulphurati	—	—	q. s.

Misce,

Misce, siat elect. de quo capiat nucis moschatæ molem ter in die, horis duabus ante et post prandium; et hora septimâ vespertinâ superbibat cyathum misturæ sequentis:—

R <sub>1</sub> Aquæ calcis	—	—	—	unc. xvi.
• Kali sulphurati	—	—	—	drachm. jii.

Fiat mistura.

R <sub>1</sub> Natron præparati lenè calcinati	—	drachm. i.
Saponis albi Hispani	—	scrup. iv.
Mucilaginis gummi Arabici	—	q. s.

Misce, fiant pilulæ triginta, quarum capiat quatuor singulâ nocte.

It would be altogether superfluous, and perhaps impossible, to enumerate the various diagnostics concomitant on this disease, in different subjects. The most prominent symptoms, that attended my patient, I shall, however, briefly recount, viz. an intolerable thirst; parched skin; tongue whitish, and moist on its exterior surface, but reddish on the external edges; saliva white, frothy, and extremely viscid, so as to render expuition very difficult; the profluvium urinæ limpid, and of a saccharine quality, and voided upon an average to the quantity of six or seven quarts in the course of twenty-four hours. The wasting of the muscular parts had been gradual from the very first commencement of the disease; and from a corpulent habit he was reduced to a state bordering upon emaciation.

After this patient had persevered in the above medicines and regimen during a fortnight only, he found his thirst by no means so excessive. The quantity of his urine was considerably diminished, and became also of a quality more urinous, and less sweet. His amendment continued to be progressive, without feeling any interruption, either from natural or adventitious causes; and he was completely free from every symptom of the disease in less than three months after the medicines were first administered. He never once deviated from the regimen prescribed; nor omitted taking his medicines regularly, although they were extremely unpleasant. The hepatised ammonia was increased to thirty or forty drops at a dose, without his experiencing any disagreeable effects from it, and he took of this article alone, nearly ten ounces.

My patient has now continued perfectly well for more than eight months, nor has he taken any medicines since, except half a pint of SCHWEPPE'S double acidulated Soda water, occasionally prescribed, with a little brandy, by way of beverage: and although he has indulged several times in fermented liquor during that period, no relapse has ensued from such indul-

gence; and to my enquiries, very lately, he declared, that he never enjoyed a better state of health than he does at this moment.

The kali sulphuratum, or sulphuret of pot-ash, should be carefully inspected by the faculty, when administered as a medicine; because, when recently prepared, it is extremely caustic by the disengagement of the carbonic acid from the pot-ash, during the process of preparing it. In this state, more moderate doses should be made use of; but when it has regained this æriform elastic fluid, (the deprivation of which constituted its causticity,) as it frequently does in the dispensaries, by an exposure to the atmospheric air, or for want of proper caution in being secured from its contact; whenever this happens, I have always found its efficacy of little avail, either in the diabetes, or in the removal, or prevention of ptyalism excited by mercury.

LYNN, *April 5th*, 1799.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

I SUBMIT to your consideration the following observations upon the discoveries of MAYOW; a subject, which has, lately, employed the pens, and attracted the attention, of different literary characters in this island, and on the continent.

I am, Gentlemen, your obedient servant,

RICHARD LUBBOCK.

Much and deserved praise is due to the zeal and exertions of Dr. BEDDOES, and Dr. YEATS, in their attempts to render justice to the writings and discoveries of Mayow, by calling the attention of the learned to the merits of this great philosopher, the KEPLER, perhaps the NEWTON, of chemical science.

It appears however to me, from the perusal of some contemporary and subsequent writers, found, chiefly, in a private and provincial collection of books, that the knowledge of Mayo's writings was, as much, and as generally, diffused over Europe, immediately upon, or very soon after their publication, as of any work of science ever published, in which the march and progress of the human mind was equally outstript, by equal depth of research or boldness of discovery; and the advocates of Mayow have, perhaps, been too rapid in their conclusions, in asserting, that contemporary writers received his works with an ungrateful silence, or ignorant insensibility.

In

In support of the early attention of the learned to Mayow's writings, it may be remarked, that the press at Oxford, in the course of a few years, sent forth two editions of some, if not of all his treatises; and that the 'Tractatus quinque,' were also very soon reprinted in Holland. It may also be observed, that MANGETUS was not insensible of the value of his writings, having, about the end of the last century, reprinted his treatises on Respiration, and on the Fœtus in utero, in his "*Bibliotheca Anatomica*," having quoted them, in terms of praise, in other parts of the same work.

It is with some surprise that I find Dr. Yeats giving it as his opinion, that MUNDY, in his work, printed at the same time with Mayow's "*De Aëre Vitali, &c.*" and also reprinted in Holland, in 1684, has not mentioned the name of Mayow, nor adopted his opinions; when at the end of the seventh chapter, "*De Atmosphæræ pondere, et Aëris elatere*," he is quoted in the following terms: "Alioquin (inquit D. J. Mayow, qui de his rebus ingeniose commentatus est) nulla omnino foret hominum, imo ne animalium quidem societas; quippe oppoteret, ut singuli et separatim vitam degerent, quo, viz. spiritus aëris penus ad vitam sustinendam bis amplius, cuique suppeteret."—The other parts of the same chapter amply prove, that Mundy embraced the opinions of Mayow, upon the nature of air. There was also printed at Oxford, in 1694, a work, entitled, "*Dissertationes Medico-Physicæ, de Antris Lethiferis, etc.*" by Dr. CONNOR, in which the name of Mayow is duly quoted, and the general reception, which his doctrine had met with, is candidly acknowledged, and in the following words, "Objicietur procul dubio, quod in Antris feralibus, animantia et faces nullatenus ex aëris, sed ex nitri aëris defectu expirant.—Receptissima enim est ubique gentium opinio de nitri aëris efficacia; qua contenditur post Cl. D. Mayow, quod aëris nitrum in sanguinem introducit per pulmones;" and after some similar observations, Dr. Connor concludes, "et arrogantiz reus viderer, si solus ego tot præclaros viros, qui hanc opinionem utrisque ulnis amplexi sunt, et foverunt, a veritatis tramite deviasse assererem."

In 1694, Dr. Coward also published his work, "*De Fermento volatili nutritio*," in which Mayow's work is referred to more than once; and to the above names, I cannot forbear adding, (with Dr. Yeats,) that of the excellent Collins, whose anatomy was printed in 1685. Thus it appears, that Mayow's Discoveries attracted, and in no small degree, the attention of contemporary writers in this kingdom.

Nor were they less known on the Continent; for Peyer, in his "*Parerga anatomica et medica*," (Amsterdam, 1682,) quotes and approves of Mayow's opinions; and in 1692, he is quoted, in a very ingenious work, published

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at Geneva, "De prima coctione et fermento ventriculi," by Viridetus—and Etmuller examines his opinions, largely, in the edition of his works, printed 1697, in his Treatise on Respiration; and it must not be forgotten, that about, or soon after this period, Mayow's opinions were referred to by some of the first philosophers and medical characters of the age. It will be sufficient to say, that John Bernouilli quotes Mayow, in his dissertation, "De motu musculari, et de fermentatione,"—that the learned Pitcairn quotes him, in his "Opuscula medica;" that Morgagni notices his opinions, in his "Adversaria;" and that Bianchi, in his orations, at the end of his 'Historia hepatica,' mentions him, among other discoveries in his physiology. But I must conclude, by remarking, that Mayow's opinions are frequently cited in the "Exercitationes medicæ," printed at London, in 1724, by John Tabor, and who has mentioned his works in the following manner; *Mirifici hujus salis præconia, a nullo vel plenius, vel magis ex professo celebrantur, quam a nostrate Mayow; e cujus scriptis tanquam e promptuario, haud pouca argumenta fuere desumpta, nitro aëreo plurimum referta; quæ, in ostendendis æris muneribus ad ignis accensionem, vegetabilium productionem, atque ad animalium motus omnes vitales edendos, totam rem confecisse credita sunt.*

It must be here admitted, that the fore-mentioned authors have quoted Mayow, for the most part, on physiological subjects, such as on the function of the stomach, and of the lungs, and upon muscular motion; and that some of them must be considered solely as friendly to the extension of his name, and not as advocates for the truth of his doctrines. And the reason that his chemical philosophy has been less noticed, is, that the opinions of Stahl were very soon made public, appealing, for their support, to a warm imagination, rather than exercising the judgment by the labour of induction, or accurate investigation.

NORWICH, *April* 16th,  
1799.

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*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

IN the second Number of the Medical Journal, you direct the attention of your readers to the important subject of epilepsy. This dreadful disorder, though not absolutely incurable, so frequently resists the best approved medicines that every practitioner must think himself fully justified in attempting to introduce any new plan of cure, which may present a rational prospect of success. During my residence at Edinburgh, I had an opportunity of seeing the *nitrat of silver* used with very considerable advantage, which appeared the

the more striking, as contrasted with the total failure of the *caprum ammoniacum*, a medicine whose credit rests upon the very respectable authority of Cullen. In October last, my friend Dr. Cappe, of York, who honoured me with a visit in Liverpool, gave me an account of his success in the use of the *argentum nitratum*, as detailed in p. 184, of your second Number. These circumstances determined me to give it a trial in the first fair instance which should occur: only one case has hitherto presented itself; but in this the *nitrat of silver* has proved of such singular utility, that though but a *single case*, I have been induced to offer it for admission into your Journal. The following account is extracted partly from the Dispensary books, and partly from notes which I took at the time.

March 8.—Owen Hughes, a boy aged 11, who works with a shoe-maker, of a pale complexion, and generally unhealthy appearance, offered at our dispensary. About two months before he had been seized with the epilepsy; at first, one fit only occurred in the day; the disorder however gradually increased in frequency and violence, till on the 8th of March (the day that I first saw him) he had four, and on the 9th, five pretty severe fits. On the 9th he began the use of the *argentum nitratum*; gr.  $\text{ij}$ . of it were made into forty pills, and he was ordered to take four of these pills, at two doses (i. e. one fifth of a grain), in the course of the day.

March 15.—He had one fit on the 10th, but none since; he feels a slight sensation of heat in the stomach, after taking the pills; his appetite appears rather impaired. He was ordered to continue the pills as before, but to drink lb. ss. of any fluid after each dose; he was also directed to take scrup. i. of Peruvian bark twice in the day.

March 22.—He has had during the last week, three fits; his general health is as before: he now feels no uneasiness after taking the pills. He has had no warning of the approach of the three last fits; formerly he had a slight previous vertigo. I now ordered him to take three pills in the morning, and two in the afternoon, drinking after each dose, The bark to be continued as before.

March 26.—He has had no more fits; the appetite is now improving. The medicines were ordered to be continued in the same manner.

April 12.—He has had no return of fits. His appetite and general health are now completely established; he has worked at his trade for ten days, without inconvenience. The bowels have not been in the least affected by the medicine; during the illness, the pulse was little different from the healthy state; and the other functions were in general little affected.

I shall

I shall, indeed, feel gratified, should this case be in any degree the means of bringing into notice, a substance which may prove an efficacious remedy for a disease so dreadful in its appearance, and so injurious to the constitution, as epilepsy. Believe me, Gentlemen,

Your obedient servant,

LIVERPOOL, *April 15, 1799.*

JOHN BOSTOCK.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

PERHAPS the following case of monstrosity may not be unworthy a page in your *Physical Journal*, nor unacceptable to its numerous readers.

About a fortnight ago, I was called to a woman who was delivered of a female child, full-grown, and, to all appearance, well formed in every part, excepting the head, and there was a deformity very remarkable:—Both parietal bones were entirely wanting, and the whole of the frontal bone, except its orbital processes, and that part which forms the nasal process: the upper part of the squamous portion of the temporal bone (on both sides) was wanting, but the mastoid and zygomatic processes could be distinctly traced, and the meatus auditorius externus seemed to be perfect; as much of the occipital bone as is extended to rather beyond the crucial ridge was present, and the whole length of the upper edge was turned remarkably outward; the integuments on the os occipitis were, from the upper part of the neck, folded up in great quantity, and terminated by dipping down under the edge of the occipital bone, where the hairs were very numerous. As to the brain, there appeared but little, not more in quantity than the half of a common sized orange, which was unequally divided by a longitudinal fissure: I would rather substitute the word excrescence for brain, for certainly the appearance had not much the character of the latter—no dura mater existed, and I believe, no pia mater (at least, none on the surface; nor, in fact, could this be expected, there being no longitudinal sinus into which the vessels could empty themselves, nor was there any appearance of vessels). Pressure on this excrescence seemed to produce no effect; but on this I would not rest, as it certainly could not, in justice, be carried to an extent sufficient to give a decided opinion. The covering seemed only a common cuticle, which was, the day after the birth, abraded in several parts. The child lived about thirty hours, making continually a moaning noise, and breathing with extreme difficulty; at intervals it was seized with a general spasm, in which

which state it remained, to appearance dead, for above a minute, when it revived by sudden and repeated gasps. In such a spasm it was carried off. The child took a little nourishment more than once, swallowing with much difficulty, which was heightened by the want of the palate. Neither urine nor *stercus* were evacuated. I much lament that I was not able to preserve this curious phenomenon : I endeavoured by various means to persuade its friends to resign it, but their low prejudices resisted every application.

I am, Gentlemen, your's respectfully,

*St. Thomas's Hospital, April 16, 1799.*

JOHN PULLEY.

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*Agreeably to the promise given in the last Number of this Journal, p. 214, we proceed to present our Readers with an Analysis of Dr. JACKSON's interesting work on Idiopathic Fever, or "An Outline of the History and Cure of Fever, endemic and contagious," &c. 8vo. 7s. Longman, 1798.*

FROM the first dawnings of medical science, idiopathic fever has engaged the uniform attention of authors and practitioners. The importance of the disease sufficiently explains and justifies this circumstance. We might therefore, at this day, naturally conclude, that no subject connected with the practice of physic, would be so well understood as that of fever. The reverse of this, unfortunately, may be considered as the fact. Among other important causes of the deficiency of our knowledge on this subject, may be enumerated, the local situation of the most celebrated medical authors. Fever is the natural product of hot climates; whereas, the principal, if not the only authors of medical sects and systems, have till lately, been limited to the temperate or cold regions of the northern hemisphere. Commercial advantages, and the wars undertaken to extend and protect them, have, within the last twenty years, afforded opportunities to men of abilities and observation, of comparing the symptoms and progress of the same diseases, under the most diversified circumstances. This comparison has been productive of new facts, and new views of the subject, and thence of many considerable practical improvements. Whenever an important branch of science, which has continued stationary in the hands of the most celebrated teachers for two or three hundred years, is attempted to be materially improved, the success will very much depend upon the manner in which, and by whom the improvements are introduced. To succeed rapidly against colleges and established professors, it is necessary that the innovator should have all the personal advantages of education and talents, and all the pro-



professional ones of experience, united to a happy facility of explaining the new, without a supercilious contempt for the old opinions. Such a character is Dr. Jackson. It would, however, be great injustice to several of his cotemporaries, to insinuate that he is the only labourer in this vineyard—ROBERTSON, TROTTER, CURRIE, and others of our own country, not to mention several in America and the East-Indies, have contributed greatly to the same end. It will be unnecessary for us to mention the diligence, the talents for observation and description, the preparatory education, or means of information, which Dr. Jackson possessed: these will appear from his works. In the advertisement prefixed to the present volume, Dr. Jackson informs his readers, that he went out to Jamaica in 1774.

“ Among the diseases of that country, *fever* was the one which presented itself the most frequently; as the most frequent, it seemed also to be the most important, and consequently occupied my chief attention. With the information acquired in this situation, and some dawnings of science in my mind, I went to North-America, in 1778, partly with a view of prosecuting the study of fevers in a new country, partly with the view of witnessing military service. Soon after my arrival in America, I was attached to the late 71st regiment; and in various services of that corps had the opportunity of observing very extensively, the different forms, and different degrees of fever, in the southern states of the American continent. I followed in this country the rule which I had observed in Jamaica, of writing down histories, and of arranging facts, at certain intervals. The result of this experience was given to the public in the year 1791.

“ The views which I had obtained of fevers, by the mode of observation mentioned above, appeared in some respects different from the views of the medical writers, or practitioners with whom I had any acquaintance; but still something remained, which seemed to require confirmation. Under this impression I offered service in the commencement of the present war, and was placed as surgeon to the third regiment of foot, or buffs, at that time embarked for the West-Indies. The destination of this corps was changed on the eve of sailing: a circumstance which I then considered as a great disappointment; but as by these means an opportunity was furnished me of extending my views to the subject of *contagious fever*, the event has turned out to be fortunate—to myself, at least, it is satisfactory.

“ In the year 1795, I was ordered to the West-Indies, to the island of St. Domingo: where the duty assigned to me, afforded the means of examining the appearance of things at different parts; and in different districts, more fully than happened to any other person on the medical staff of that island. My former rule of conducting observations was adopted on this recent service; and the result, without reference to former observations or opinions, is now offered to the public, arranged after as clear an order as I have been capable of devising.

“ The investigation of truth, as it concerns the health of man, has been the leading pursuit of my life; and this, perhaps, is my last offering to the public on the subject. I am aware that several of the opinions advanced here are heterodox! I am even aware that the manner in which they are sometimes brought forward, will be thought abrupt, if

if not presumptuous; but if true, they may in time emerge in useful application: if otherwise, their progress, and consequent injury, will be small, for they do not enter the world under the patronage of a great name.

" ROBERT JACKSON."

We have given considerable extracts from this advertisement, that the public may judge for themselves, what may be expected from such a writer who has enjoyed such opportunities for observation and experience. It ought to be observed in this place, that Dr. ROBERTSON enjoyed similar opportunities\*; and, as he also appears to have devoted himself to the subject for many years, and is no less determined to adopt nothing but what was supported by his own observation†, our readers will doubtless be pleased with a few occasional comparisons between the opinion of these two authors.

Dr. Jackson has divided his work into two parts; the first of which contains his opinions and observations on fever: the second may be considered as an appendix, on the principles of military disciplines &c. which does not occupy more than fifty pages. The first part is introduced by a short history of the origin and progress of contagious fever as it appeared in different divisions of the British army in Holland, Ireland and England, during part of the year 1793, the years 1794, 1795, and part of 1796. The first chapter Dr. Jackson commences with details of the situation of the troops, and the prevailing diseases while in the channel and at Jersey. These details are interspersed with several valuable observations on the introduction of contagion into regiments and ships; with the means of preventing its spreading. We are next carried with the troops into Holland, where the various symptoms which presented themselves among the sick, are always described in pointed and impressive terms. In September, on the right bank of the Maese, where upwards of sixty men were attacked with fever within the space of twenty-four hours, he says,

" The symptoms of the complaint were violent in the commencement; the head-ach attacked suddenly, and severely distressed the patient: the eyes were often hot, painful and turgid; the countenance flushed, cloudy and grim; the limbs ached grievously, similar to the aching in the cold stage of intermittents, or accompanied with sensations of gnawing and tearing, more particularly along the shoulders and arms; the skin was generally dry, tender of the touch, or did not bear a pressure without pain; the heat

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\* See an Essay on Fevers, wherein their theoretic genera, species, and various denominations, are from observation and experience for thirty years, in Europe, Africa, and America, and on the intermediate seas, reduced under their characteristic genus *Febrile infection*; and the cure established on philosophical induction. By ROBERT ROBERTSON, M.D. 8vo. Robinson, 1790

† See pages 3, 86, 168, &c.

heat was often ardent, and sometimes pungent; the pulse was insidious, sometimes agitated and irregular, sometimes apparently little disordered in point of time, but seldom energetic, elastic, and expanding; the tongue was usually *white and slimy*; to which was often added nausea and sometimes vomiting; thirst was irregular, rest was altogether wanting, or the sleep was disturbed by dreams; the state of the bowels was uncertain; costiveness prevailed, or purging approached to dysentery: in many instances, there were convulsive or spasmodic motions of the moving powers, tremors, startings, affections of the organs of respiration, alternating with affection of the head. This disease did not terminate in regular intermissions, but it was disposed to subside in three or five days, it seldom extended to seven. It often terminated finally in form of dysentery, or in local disease of an organ."—p. 13.

After the troops were withdrawn from the continent, in May, 1793, the attention of Government seems to have been directed towards the French islands in the West-Indies. With this view, two expeditions were formed: the one directed against the Caribbean islands; the other, destined for St. Domingo, assembled at the Cove of Cork, and was chiefly composed of drafts from newly raised regiments serving in Ireland. In this the author occupied a situation on the medical staff. To prevent desertion and irregularity among the troops, which appeared in September, an encampment was formed on the island of Spike, an unsheltered island in the harbour of Cove. There the seeds of fever sprung up, and by the time the troops were all embarked, the disease was aggravated to an uncommon degree of virulence.

"From the middle of October to the middle of February, not fewer than 500 men (out of 9000) were numbered with the dead; during which period, not fewer than 8000 had been mustered on the list of sick. The causes are obvious, and similar to those which produced such ravages on the continent, viz. the seeds of infection, incautiously introduced into the army by the recruits of independent companies, called into activity by a variety of causes, concentrated and exalted into a degree of pestilential virulence, by accumulation in a narrow space."—p. 35.

Dr. Jackson, after stating the various symptoms that occurred in the different degrees of fevers which harrassed these forces, adds,

"The sickness which prevailed among the troops assembled at the Cove of Cork, for the reinforcement of St. Domingo, furnishes an extensive field of observation on the nature of the contagious fever of armies. The operation of the cause manifested itself in a great variety of forms. It was evidently connected with *sores and spreading ulcers of the legs*, and more evidently still, with diarrhœa, with dysentery, or severe gripings and bloody evacuations: the irregular forms, and slighter degrees of fever, were numerous; the violent and threatening, occurred daily; and the concentrated, suspending life, as it were, by a direct operation, appeared on different occasions. While the troops were on shore under tents, in wet and stormy weather, the prevailing form was dysenteric; it often became febrile under a roof, or on board the small vessels employed as hospitals; it generally became febrile after embarkation. It may

may be further remarked, that the form soon became febrile, violent and concentrated, in the crowded hospitals of the fort; that the mortality was great, and that life there seemed often to be suffocated or arrested without struggle or resistance. In the barns; hovels, and sheds, the appearance were more irregular, and the symptoms were more threatening, but the mortality was comparatively small, and recoveries were frequently rapid. On board of transports, where the patients remained below during the greatest part of the time, the disease was violent, concentrated, and speedily fatal: where brought on deck, and remaining on deck during the day, the effects were similar to those in the sheds on shore. Under confinement between decks the disease seemed to retain its full power of contagion: under exposure to the air on deck, this power was evidently weakened; and where to this exposure were joined daily washing of the body and purifying of the bedding, it was so far weakened, that its existence by the time of arrival in the West-Indies, was in many cases doubtful. This disease follows a law essentially different from the *periodical movements* of endemic fevers.

Dr. Jackson next proceeds to examine more minutely, the means by which contagion is brought into and propagated among armies and navies. His observations on this subject, appear highly important, but we think them more particularly directed to the Commander in Chief, than to the medical board.

The troops being arrived in St. Domingo, the author employs his second chapter in delineating the situations, soils, aspects, winds, and elevations of the stations, occupied by the British troops, together with their effect on the health or modification of the disease. As these particulars can be only interesting to persons going to the island, who will doubtless consult the work itself, we shall give few extracts from this part. By a comparison of the endemic fever which occurred in various situations of St. Domingo, with the contagious fever of Europe, the author draws the following inferences. The endemic disease of all the West-India islands, is fever, diarrhoea, sore legs, or spreading ulcers of a peculiar kind. These complaints moreover appear so connected with each other, as to afford a presumption that they depend fundamentally upon the same general cause, differing in degree of force, or differently modified according to circumstances of season, place, and situation. The connection alluded to is obvious in the endemic, and a similar connection is observable under the action of the contagion of jails, hospitals, crowded barracks, and crowded ships.

It appears from a perusal of their histories, that nearly all the islands of the West-Indies are under similar laws, with regard to health. In towns and places near the sea-coasts, European soldiers sicken and die; in the mountainous and interior parts of the country, health suffers little, and mortality is inconsiderable. The subsequent observations in this chapter being of a political nature, we pass them over.

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The author deriving his information from sources such as we have stated, advances from the numeration of facts, to the formation of doctrines; and, in his third chapter, enters upon the CAUSES of Idiopathic fever. This part of the subject is so important, and as it forms the basis of his two-fold distinction of fevers, viz. endemic and contagious, we conclude that our readers would be much disappointed, if we did not lay before them the author's reasoning upon it.

T. B.

(To be continued in our next.)

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

IN laying before the public a case, which very accidentally fell into my hands, and in which the cow-pox was said not to have proved a preservative from the contagion of the small-pox, I had no intention of declaring myself an enemy to the inoculation of this disease; my only wish was, to induce practitioners to pause a little, to obtain more decided experience of its utility, before it should be *generally* recommended. It did not appear to me, that a sufficient number of trials had been then made, nor is the certainty that the having suffered the vaccine disease, will prove a preservative from the infection of the small-pox, as yet, less problematical than before. Much more experience is still wanting to warrant the *general* adoption of the measure. I may then, I hope, be permitted to make a few observations in explanation of what I have said in the first Number of the Medical Journal, without being supposed to engage in any controversy. This is the more necessary, as a very sensible correspondent, Mr. Laurence, seems to have misunderstood, as well as to have misquoted my words. It was far from my intention to assert, that "all hazardous experiments ought to be discouraged." I only intimate, that such rash experiments, as the venturing to insert a variety of acrid animal poisons, by inoculation, into the human constitution, ought to be discouraged. In saying this, I certainly did not mean to throw any blame upon Dr. Jenner, for inoculating with the matter of the cow-pox. It was a received opinion in the country, that the having suffered this disease, was a preservative from the contagion of the human small-pox, and from suitable enquiries made, Dr. Jenner found reason to believe the fact. Now although all new experiments may be said to be in some degree hazardous, I am far from thinking that this, instituted with a view to determine whether the inoculated disease would have the same effect, was one that ought not to have been made. On the contrary, I think every praise is due to Dr. Jenner  
for

for bringing it to the fairest of experiment, and laying it before the public in the handsome manner he has done. Here was an object certainly worthy of the hazard that was to be run; but when Dr. Jenner, from having adopted the improbable opinion, that the disease owed its origin to the grease in horses, ventured to inoculate with the matter of a putrid sore, with a view of determining if this also had the power of preserving from the contagion of the small-pox, he was, I think, entering upon the field of rash experiment. No immediate benefit was likely to accrue from such a trial. It was indeed an inquiry of pathological curiosity; and had repeated experiments upon the cows already evinced, that this matter was capable of producing the disease upon the brute animal, I do not mean to say, that even this experiment with due circumspection, and a proper sense of the hazard attending it, was in no case to have been made. But when I learn, that this and similar experiments are making, in all the variety of modes, by different persons, without any apparent fear of the possibility of doing any mischief, it seems to me to be high time that the public should know, that such experiments may not only be attended with eminent hazard to the immediate subject of them, but that there is, at least a *possibility*, that an infectious disorder may thus be created. That the inoculation of some animal juices, in a certain state of corruption, is capable of producing very dangerous disease in the individual, is too well known, from the accidents that have happened in prosecuting anatomical researches. That a disease of a contagious nature can be thus excited, I do not assert; but if the thing be not in itself *absolutely impossible*, the greatest caution ought certainly to be used in instituting experiments from which there is only a distant *possibility* of such a deplorable mischief. For the sake of illustration, let us suppose, that a writer upon the cow-pox starts the hypothesis, that a certain febrile state is excited in the system by the absorption of the matter of the cow-pox, which, though not the same with the variolus fever, has nevertheless such an analogy with it, that whoever has undergone this particular fever, will have the constitution so changed by it, that he shall be no longer liable to be affected by the contagion of the small-pox;—another, wishing to bring this to the test of experiment, and expecting to throw light upon the pathology of the disease, inoculates several persons with the matter of the pox of swine, or any other eruptive disorder affecting animals, of any description, merely to try if the fever excited by this matter will have the same effect, of enabling the constitution, ever after, to resist the contagion of the small-pox; I should not hesitate to pronounce such to be a rash and hazardous experiment, not free from the *possible* danger of producing new disease.

The history of medicine informs us, that several diseases have arisen in the world, which were before unknown. The origin of these is certainly  
 4 involved

involved in great obscurity, but, as Dr. PEARSON observes, it has been often conjectured, that many of them are derived from brutes. Dr. GIRTANNER, in his very elaborate history of the syphilis, supposes this disease to owe its existence to the poison of a venomous insect, made use of by the natives of South-America, for a lascivious purpose. And Dr. JENNER is himself inclined to suspect, that the small-pox may have been derived from the vaccine disease; perhaps he will consider the change which this disorder seems already to have undergone, in that it now frequently produces an eruption of pustules, in some cases not to be distinguished from the human small-pox, as a confirmation of this hypothesis. Indeed, if there has been no error\* in the performing some of the operations, it should seem as if the two diseases are so nearly allied, that the one cannot be distinguished from the other. In one case that fell under my own observation, the disease produced by the inoculation for the cow-pox was accompanied by an universal eruption of pustules, which, neither from their appearance, the accompanying fever, the time of the eruption, nor the period of their duration, could be any ways distinguished from the distinct small-pox, yet this patient was inoculated under the care of a physician, (who has been very laudably employed in collecting such a mass of evidence, as must soon prove what advantage can be expected from substituting the cow-pox for the small-pox), with matter, as I was assured, taken by this gentleman himself, upon the point of a new lancet, from the arm of a child that had been previously inoculated with matter taken immediately from the cow.

If the same care was taken to use a new lancet for this first inoculation there does not appear to be any other source of error, and as far as one case can be a proof, Dr. Jenner's suspicion of the origin of the small-pox, appears

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\* In these cases, where an eruption of pustules not to be distinguished from the small-pox has been produced, it is difficult to avoid suspecting, that for want of due care, the same lancet may have been used for inoculating for the two diseases; by which means the small-pox may have been communicated, where the cow-pox was intended. Perhaps no ordinary washing will effectually deprive the lancet of the variolous infection. Many accidents have been said to happen of unintentional communication of the small-pox, by letting blood with a lancet which had been long before used for the purpose of inoculation. Some time since, my father having inoculated a patient, and washed his lancet in warm water, was wiping it dry, when the patient accidentally received a slight wound in the finger. This wound was evidently infected with the poison, and went on in the same manner as the incision of the arm.

appears to be well founded\*, as in this instance, where two persons only were inoculated in succession with the vaccine disease, a real small-pox, a disease in all its symptoms, its progress and termination, exactly similar to the human small-pox, is produced: of its infectious nature, indeed, I have no proof, although I have not the smallest doubt. Now let us suppose the human small-pox to be unknown in any country, where the vaccine disease prevails; a human subject is accidentally, or purposely, by way of experiment inoculated with the poison from the teats of the cow, and others in succession are inoculated from the transferred disease, till a real small-pox is created, how many thousands would have to deplore the dreadful catastrophe of this unfortunate experiment. Who shall say that if similar experiments were to be made with the poison of the pox of swine, or an eruptive disease of any other animal, a new contagious disorder might not be produced? But to hint at the possibility of such an event, is surely sufficient to prevent the undertaking of such rash and hazardous experiments.

April 20th, 1799.

JOHN SIMS.

*Diseases admitted as In and Out-Patients of the Physicians of the Westminster Hospital, from the 20th of March to the 20th of April, 1799.*

	No. of Cases.		No. of Cases.
Fevers - - - -	4	Enterodynia - - - -	2
Amenorrhœa - - - -	8	Epilepsy - - - -	1
Anasarca - - - -	2	Erysipelas - - - -	1
Ascites - - - -	3	Hooping-cough - - - -	1
Asthénia - - - -	1	Hysteria - - - -	1
Asthma - - - -	3	Itch - - - -	6
Catarrh - - - -	1	Menorrhagia - - - -	1
Cholera - - - -	2	Phthisis - - - -	4
Convulsions - - - -	1	Paralysis - - - -	4
Cephalæa - - - -	1	Pleurisy - - - -	3
Cough - - - -	14	Quinsey - - - -	2
Diarrhœa - - - -	8	Rheumatism - - - -	12
Dysentery - - - -	3	Struma - - - -	1
Dyspepsia - - - -	4	Urticaria - - - -	1
Dysuria - - - -	1	Vomiting - - - -	1

\* It is only meant that this case, if no error attaches, goes to prove the identity of the two diseases. Perhaps it may be thought more probable, that the vaccine disease is derived from the human, more especially as, in the brute, it appears to be a local disorder, affecting the same animal at different times.



*List of Diseases from the 20th of March to the 20th of April;  
being the Result of the public and private Practice of a Physician  
at the West End of the Town.*

ACUTE DISEASES.		No. of Cases.			No. of Cases.
Catarrh	-	22	Hysteria	-	3
Acute Rheumatism	-	5	Epilepsy	-	2
Pleuritic Stitches	-	3	Chorea	-	2
Peritoneal Inflammation	-	1	Paralysis	-	6
Inflammatory Sore Throat	-	4	Cephalæa	-	8
Speckly Sore Throat	-	2	Epistaxis	-	1
Ophthalmia	-	7	Dyspepsia	-	10
Scarlatina	-	6	Gastrodynia	-	5
Measles	-	3	Enterodynia	-	4
Small-pox	-	3	Diarrhœa	-	8
Malignant Fever	-	5	Colica Pictonum	-	2
Slow Fever	-	6	Hæmorrhoids	-	3
Hectica	-	7	Jaundice	-	2
Child-bed, and Milk-fever	-	2	Fluor albus	-	4
Acute Diseases of Infants	-	8	Chlorosis	-	8
Tertian	-	1	Menorrhagia	-	3
CHRONIC DISEASES.			Abortion	-	1
Cough and Dyspnœa	-	79	Worms	-	3
Hæmoptoe and Phthisis	-	18	Tabes Mesenterica	-	3
Chronic Rheumatism	-	12	Scirrhus	-	2
Lumbago and Sciatica	-	5	Itch and Prurigo	-	74
Dropsy	-	9	Lepra	-	1
Scrophula	-	5	Nettle-rash	-	1
Asthénia	-	21	Purpura	-	2
			Gutta Rosea	-	3
			Porrigo	-	2

The measles are at present declining: in one child, who had been previously affected with the whooping-cough, the rash was succeeded by numerous livid spots, diffused over almost the whole body, and resembling those of the purpura, or the petechiæ sine fibre, in their most dangerous form. No harm, however, ensued; and the complaint was removed in about eight days.

The scarlatina has, during this present month, become much milder, so that all the cases put down terminated early and favourably.

Inflammation of the eyes, next to catarrh, cough, and rheumatism, seems to have been the most general disease; it was very troublesome, and in many cases, of long duration. The same complaint occurred epidemically in the months of February, March, and April, of the last year.

It may not be amiss to observe, that the itch, which is usually rife in the spring season, has, during the last six weeks, taken a very wild range, and appeared in many respectable families, never before liable to the intrusion of such a visitor.

R. W.

*A. coun:*

*Account of Diseases in London, from the 20th of March to the 20th of April.*

No. of Cases.		No. of Cases.	
ACUTE DISEASES.		ACUTE DISEASES.	
Typhus Gravior	- - 3	Fluor albus	- - 6
Typhus Mitior	- - 5	Enterodynia	- - 5
Peripneumonia	- - 3	Diarrhœa	- - 9
Peripneumonia Notha	- - 5	Vomitus	- - 3
Catarrh	- - 4	Gastrodynia	- - 4
Inflammatory Sore Throat	- - 3	Dyspepsia	- - 10
Ophthalmia	- - 1	Obstipatio	- - 2
Acute Rheumatism	- - 6	Hæmorrhoids	- - 3
CHRONIC DISEASES.		Prolapsus Ani	- - 1
Cough	- - 12	Dysuria	- - 3
Dyspnœa	- - 7	Herpes	- - 4
Cough and Dyspnœa	- - 13	Hysteria	- - 3
Hoarseness	- - 4	Palpitation of the Heart	- - 2
Hæmoptoe	- - 3	St. Vitus's Dance	- - 2
Phthisis Pulmonalis	- - 10	Hypochondriasis	- - 3
Pleurodyne	- - 4	Chronic Rheumatism	- - 14
Ascites	- - 2	PUERPERAL DISEASES.	
Anasarca	- - 3	Dolores post partum	- - 3
Cephalalgia	- - 10	Menorrhagia lochialis	- - 2
Syncope	- - 3	Low Fever	- - 2
Vertigo	- - 5	Mastrodynia	- - 3
Epistaxis	- - 2	INFANTILE DISEASES.	
Menorrhagia difficilis	- - 4	Aphthæ	- - 4
Amenorrhœa	- - 7	Ophthalmia	- - 3
Chlorosis	- - 5	Fever	- - 2
		Vermes	- - 4

The unusually long continuance of cold weather, and the pretty constant course of the wind from the East, and North-East, have protracted the duration of many of the winter diseases. Cough, Dyspnœa, catarrh, and all the species of pneumonic affections, still continue to prevail very generally.

In several cases of phthisis pulmonalis, the symptoms have seemed to be aggravated by the state of the weather; and there has been a very rapid advance towards the fatal catastrophe.

Rheumatisms, both of the acute and chronic species, have been very frequent. In this disease, the degree of pain has been very considerable, and the recovery from the acute species of it uncommonly slow. Some patients who had recovered from acute rheumatism, previously to the commencement of the winter, and who during the first of the winter months, continued free from every symptom of the disease, have been much afflicted by the wandering pains of the chronic species, during the last two months.

Inflammatory sore throats have been very frequent, and have been followed, especially in scrophulous habits, by a tenderness and enlargement of the parotid glands.

*Practical*

*Practical Remarks on the Diseases which occurred on board the Astrea, &c.*—By STEWART HENDERSON.

(Continued from our last, p. 137—143.)

INTERMITTENT FEVER.

THIS may be said to be another variety of the endemic, in a milder degree, occasioned by the same cause, marsh-miasma, introduced in a smaller proportion into a constitution not disposed to be affected with morbid movements. The cases of this fever which occurred, happened in the healthy season of the year; they were mostly tertians. After an emetic and purgative had been given, the bark was ordered to be taken every hour during the intermission. On the approach of the cold fit, forty drops of antimonial wine, with twenty of tinct. opii. were administered; which lessened the violence, and shortened the duration of the paroxysm. In some cases, I found it beneficial to give wine and powerful stimulants, so as to keep up and increase the action of the arterial system, beyond the usual period of the returning paroxysm; while the bark was given every hour without intermission, unless prevented by the patient being asleep: careful centinels were placed over the sick, and they were frequently visited in the night, by myself, or my assistants. Calomel, in small doses, was of benefit in some cases, where I conceived the disorder proceeded from visceral obstruction; while others required a change of air, of which they had the benefit, when removed to Port-Royal Hospital.

DYSENTERY.

This disease is not limited or peculiar to any climate; nor is there any natural cause known to produce it: if it were occasioned by any particular quality in the air, the natives, as well as seamen and soldiers, would be attacked with it; but we find this is not the case, for when the dysentery was raging in the British army at the Cape of Good Hope, where great numbers died, not one of the inhabitants were seized with it; nor is it a disease known among them. Whenever it becomes epidemic among the inhabitants of any country, it may always be traced to infection introduced; it being the constant attendant on camps, and the scourge of an army, more destructive than any other enemy. I therefore consider it an *artificial* disease, brought on by those unavoidable hardships, to which soldiers and seamen are exposed. Cold and dampness, when the body is not sufficiently covered, by obstructing perspiration, and increasing the determination of the fluids to the intestines, sometimes combined with febrile miasma, produce the whole phenomena of dysentery.

In the treatment of this disease, I generally began with an emetic of ipecacuana, with a grain of tart. antimon. Bleeding was never employed, unless the patient was of a strong plethoric habit, and the febrile symptoms run high. Purges of salt, or rhubarb with calomel, were frequently repeated: at night, forty drops of antimonial wine, with twenty of tinct. opii, which promoted perspiration, and relieved the spasms, when the tenesmus was troublesome. Emollient injections with opium, and fomentations were of use, when the pains were wandering; but when the pain became fixed in any part of the intestines, indicating inflammation, a large blister was instantly applied, which in every instance removed it; perspiration was kept up by repeated doses, either of preparations of antimony, or Dover's powder, assisted by warm diluents. In cases combined with the remittent symptoms, inducing great debility, accompanied with sanguinary discharges, bark and wine were given, with farinaceous vegetables for food, such as rice, sago, or tapioca; sometimes to ease pain, and procure a little rest, opium was given, but seldom without some medicine to determine its action to the surface.

A few cases occurred unattended with fever, violent gripings, or tenesmus: in these, mercurial purges and calomel, in small doses, were prescribed with success.

#### DIARRHŒA.

This disease generally arose from relaxation, brought on by eating unripe fruit, and committing other irregularities. It was easily removed by lenient purgatives, followed by astringents and tonics.

#### HEPATIC COMPLAINTS.

Having served in India with his Majesty's troops, during the campaign of 1782, 1783, and 1784, in the Carnatic and Southern provinces, I had frequent opportunities of seeing liver-complaints, a disease often occurring in every hot climate, though not always suspected or discovered, and sometimes confounded with complaints of the pleura or lungs. The cases which occurred on board the *Astrea* were brought on by violent exercise in the sun, joined to the abuse of spirits. The patients complained of pain in the side, with some difficulty in respiration; the pulse full and frequent, sometimes they felt a pain in the shoulder, and about the region of the liver, which last, when pressed, was attended with a catching and troublesome cough. Bleeding, calomel-purges, and a blister applied to the side, and sometimes mercury in small doses, were alternately resorted to, until health was perfectly restored.

In chronic cases, the patients did not complain of acute pain, but a dull, obtuse pain in the hepatic region; the countenance dejected, and the animal spirits greatly diminished; the eyes dull, but not yellow; the tongue dry: the stools small, frequent, and sometimes mixed with mucus, as in dysentery;

sentery; the appetite irregular, often voracious. In these cases, without any preparation, I had recourse to mercury, either internally or by friction, which last I preferred. The good effect of this treatment became obvious from the favourable change of that dejected countenance, so characteristic of the complaint, for a more cheerful one: and from the energy being restored to the hepatic system, which we discovered by the secretions; the stools becoming more regular, and of a natural colour: their diet consisted chiefly of small quantities of animal food, with the farinaceous vegetable.

#### SPASMODIC AFFECTIONS.

Those affections were mostly confined to the abdominal viscera, and brought on by lying upon deck in the night. The patients complained of excruciating pain and stricture, commonly about the umbilical region, nausea, and sometimes vomiting. If fomentations did not cure the pain, a large blister was applied; calomel with jallap taken internally, and clysters thrown up, until stools were procured, which removed the complaint.

One case occurred where the spasms were general. A man of a weak, irritable constitution, after taking an antimonial emetic, which operated rather violently, was seized with coldness on the surface of the whole body; violent contraction of the lower extremities, extending to the muscles of the abdomen, diaphragm, and ribs; the muscles of the face and neck became violently convulsed and distorted; the eyes sunk, and no pulse anywhere to be felt; respiration hardly to be perceived; he lay for some minutes in this state, so that while the warm bath was getting ready, the bystanders, from his external appearance, concluded he was dead. Volatile and stimulating applications were used, together with frictions with hot cloths; injections of warm water and laudanum were thrown up; wine mulled with spices were given, until the heat of the body was restored, by persevering in these remedies. The disease at length yielded to this treatment; but he continued in a state of debility for some time, which rendered the administration of bark, cordials, and, at the same time, a nourishing diet, useful and necessary.

#### SCURVY.

The four cases of scurvy which occurred, were those of men who were devoted to irregular habits, and had for some years manifested a predisposition to the disease. Every care was taken to prevent it, by a sufficient allowance of vegetable aliment, a deficiency of which only can produce the disease; and before we went on a cruise, I took care to provide for the remedy on board. Plenty of lemon or lime-juice was given on the first symptom of the disorder, joined to what vegetable diet the ship afforded.

(To be concluded in our next.)

*Experiments and Observations on the acid Properties of the  
Yellow Oxyd of Tungsten.*

*(Communicated by a Correspondent.)*

WE are indebted, for our first accurate ideas of the nature of the metallic substance called tungsten, to SCHEELE, who affirmed that it consisted of calcareous earth, united to a peculiar acid.

His first process for obtaining it was, by fusing one part of tungsten with four of carbonate of potass, and dissolving the melted mass in boiling water. This water holds in solution a salt, resulting from the union of the tungstic acid with the alkali made use of, which is decomposed on the addition of the sulphuric, nitric, or muriatic acids, which unite with the potass and precipitate the acid of tungsten in the form of a white powder. He afterwards proposed a second, which consisted in digesting the pulverized tungsten in diluted nitric acid, which dissolves the calcareous earth, and uncovers the acid of tungsten, which appears in the form of a yellow powder. After repeatededulcorations have freed the powder from any sensible portions of acid, it is taken up, by digesting with caustic volatile alkali, which completely dissolves it. On the addition of an acid, it is precipitated from this solution in the form of a white powder, as in the foregoing process, and this powder was, by SCHEELE, and afterwards by BERGMAN, called the pure acid of tungsten.

Wolfram, treated in the same manner, afforded also a white precipitate, which was shewn by Messrs. D'ELHUYART, to be the same with that obtained by Scheele, from tungsten. They proved likewise, by numerous and conclusive experiments, that this white substance was not the pure acid, but a triple salt, resulting from the union of the tungstic acid with the potass, and the acid employed in the precipitation. The yellow powder uncovered by digestion in nitric acid, was, according to the experiments of these gentlemen, the pure acid of tungsten.

In the following experiments of VAUQUELIN and HECHT, extracted from the journal *des Mines*, they have not only confirmed those of D'Elhuyart, but prosecuted their enquiries still further, and ascertained completely the nature of this metallic acid.

A mixture of three parts of nitrate of potass, with one of pulverized wolfram, was thrown into a red-hot crucible, and kept in a state of fusion for half an hour. The mass, poured out upon a plate of iron, was of a greenish colour, and on cooling, christallized at its surface in small needles. It

was

was dissolved in water, and deposited a brown insoluble matter, which consisted of the oxyds of iron and manganese. The filtered liquor was of a greenish colour, which it was deprived of by boiling, and then again deposited a brownish sediment.

1. On the addition of sulphuric acid to this liquor (which held the tungstate of potass in solution), a white precipitate was formed. The same phenomenon took place on the addition of the nitric, muriatic, acetous, and oxalic acids.

2. On evaporating the liquor resulting from the precipitation of this white matter, a salt was obtained, composed of potass, the acid employed in the precipitation, and the acid of tungsten, which was rendered slightly soluble in water by the potass and acid employed. The solubility of this triple salt was, however, diminished by the further addition of acid.

3. In decomposing the tungstate of potass by the sulphuric acid, there remains in the liquor sulphate of potass, but scarce any acid of tungsten, if a considerable quantity of sulphuric acid has been employed.

4. On adding nitric acid to the solution of tungstate of potass, a salt is obtained from the supernatant liquor, in crystals resembling the scales of fish. This salt contains nitrate of potass \*, which had not been decomposed, and a triple salt, composed of the tungstic and nitric acids, and potass: it is soluble in water, and with lime-water forms a white precipitate; it is not affected by the air; it has a sharp, metallic taste; during evaporation, it spreads over the sides of the vessel; when distilled with sulphuric acid, it affords nitric acid, and the retort contains sulphate and tungstate of potass. This residuum, dissolved in water, does not form a yellow powder by ebullition, notwithstanding the acidity of the liquor. It is necessary to separate the sulphate of potass by lixiviation, and boil the white residuum in a concentrated acid. The white salt then assumes a yellow colour, and it is only in this last state, that it is perfectly pure.

5. The acetous acid occasions also a slight precipitate, in the solution of the tungstate of potass, but there is a point at which this precipitate disappears, and does not re-appear, but on the addition of a greater quantity of acetous acid. This salt has at first a taste resembling that of acetite of lead; but it soon after produces a sensation sharp and styptic, resembling that of the metallic salts.

6. The phosphoric acid occasions only a slight precipitate, even when added in considerable quantity. It appears to form a salt extremely soluble.

7. When

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\* Vauquelin substituted the nitrate of potass for the carbonat in these experiments which is attended with some advantage in the decomposition of wolfram.

7. When the white salt is boiled in concentrated vitriolic acid, diluted with an equal quantity of water, it assumes a yellow colour, more or less deep: the same takes place with the nitric and muriatic acids. The liquor separated from the yellow precipitate affords, by evaporation, a salt composed of potass and the acid employed, with a small quantity of the white salt that remained dissolved.

8. When boiled in acetous acid, it acquires a blue colour, which becomes deeper on evaporation. The liquor when filtered is clear, but deposits, at the end of some days, a white powder, which becomes yellow, on boiling with the sulphuric acid. The blue powder loses its fine colour in a great degree by drying.

9. Boiling water is equally capable of dissolving the white salt; the clear liquor deposits, after some time, a white powder.

10. The oxygenated muriatic acid occasioned no precipitate in the solution of tungstate of potass. The white salt was not rendered yellow by it; but was dissolved on ebullition, and again deposited, on cooling, in the form of a white powder. It appears that this solution is effected by the water alone in which the oxygenated muriatic gas is dissolved.

11. Caustic potass and soda, as well as ammonia, completely dissolve this triple salt. It is an excellent mode of separating the silex, which always accompanies wolfram.

12. A plate of iron, in contact with the white salt, instantly produces a fine blue colour. On boiling it with small pieces of iron, and a little water, the colour is equally manifested: a small portion of the salt, is however dissolved, and the rest preserves only a greyish blue colour.

13. The yellow acid of tungsten, although carefullyedulcorated, retains always a small portion of the acid employed in separating it from the potass. It may be entirely deprived of it, by subjecting it to a red heat in a crucible for some time; and it is not till after it has undergone this last operation that it is in a state of perfect purity.

These experiments serves to confirm those of D'ELHUYART, who had already advanced, that the tungstic acid of SCHEELÉ, or the white powder precipitated by means of an acid, was a triple salt, composed of potass, acid of tungsten, and the acid employed in the process; and that the yellow powder produced by decomposing tungsten, or wolfram, by means of the nitric, or muriatic acid, after the second manner described by Scheele, was the pure acid of tungsten. From the experiments of Vauquelin, however, it appears, that simpleedulcoration is not sufficient to free the yellow powder from any admixture of acid, a small portion of which it obstinately retains, and on which its acid properties depend. When freed, in the manner before directed, from all remaining portions of acid, it presented the following properties:—

NUMBER III.

C c

1. Exposed



1. Exposed to the blow pipe, in a platina spoon, it assumed a deep green colour: on charcoal it became almost black.

2. It dissolved in borax, without altering either the colour or transparency of the globules, even when in considerable quantity.—When a very large proportion, however, was employed, it communicated a black, or deep blue colour to it.

3. The ammoniacal phosphat of soda completely dissolved it, and forms a globule of a deep blue colour.

4. When calcined a long time, with access of air, its yellow colour becomes deeper, and passes sometimes to a green. On heating it during several hours in a covered crucible, it assumed a greyish black colour.

5. When thus calcined, it has no taste. It is not soluble in water, and very triflingly so in acids. On trituring it with water, it remains suspended for a long time, and forms a kind of yellowish emulsion, which does not redden blue vegetable colours. It does not change colour either by exposure to the sun or to humidity.

6. It was boiled in concentrated nitric acid, and evaporated to dryness: no red vapours were formed. After having repeated this process six times successively, it was exposed to a red heat for some time, and found to have undergone no change during the operation: it had the same colour, and afforded no signs of acidity.

It is evident from these experiments, that the substance formed by the combination of tungsten with oxygen, does not possess those properties which at the present day are ascribed to acids, since it is insoluble in water, does not alter blue vegetable colours, and has no sensible taste. It possesses, in common with acids, the power of combining with earths, alkalis, and the metals;—but are these characters sufficient to authorize us to place it in the same class?

From these considerations it appears necessary to exclude this substance from the number of metallic acids, and rank it amongst the oxyds; or if we must still consider it as an acid, we shall be obliged to regard as such the oxyds of zinc, tin, antimony, and arsenic, which like it unite with alkalis, earths, and some other metallic oxyds, with which they form a species of neutral salts. If Scheele, who first made known this substance, has regarded it as an acid, it is because he never obtained it but in a state of triple combination; which exhibits indeed acid properties, because it constantly retains a portion of the acid employed in the precipitation, which is proved by the experiments of D'Elhuyart, as well as the foregoing.

This substance, therefore, known till now under the name of acid of tungsten, ought no longer to be considered as such, but as an oxyd of tungsten, and referred to the class of metallic oxyds to which it evidently belongs.

T.

T.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

**AN** important error has been discovered in part of the MS. of the "*West Country Contributions*;" and I should be much obliged to you to inform the possessors of that work, that at p. 381, l. 9, they should read "*three grains*," instead of "*nine grains*."

I am, Gentlemen, your's, &c.

THOMAS BEDDOES.

*Memoirs on the Odours which are exhaled from the Body, considered as symptoms of health and disease :---By C. BRIEUDE.*

(Extracted from the '*Recueil periodique de la Societ  de M decine de Paris*,'  
No. XXIX. Vol. V.)

**DAILY** experience proves the importance of the olfactory sensations, and the necessity of analysing them. The bad smells, which often afford indications to the physician, are most difficult to be described, and distinguished accurately. In the same case where the relative chain of ideas would be entirely formed by habit, the difficulty of expression would present a new obstacle; and in fact, both ancient and modern languages are defective in terms to express the different modifications of the olfactory perceptions; a certain proof, that notwithstanding the number and frequency of these perceptions, a nomenclature of them has never been attempted.

The author has not treated the question of odours in its full extent, but confined himself to those which in man depend upon age, sex, profession, climate, diseases, certain secretions, excretions, &c.

In children the predominance of acid smell is sufficiently perceptible; it exhales from the *crusta lactea* (*croûtes*), their sweat, and most of their excrementitious evacuations; when it changes and approaches to an alkaline tendency, it indicates a disposition to sickness, as practitioners and nurses know by experience. Several circumstances may then produce a different modification of that smell peculiar to childhood.

In adults a strong smell of a marked kind may be considered as a type, and taking the name of male odour. Luxury, and an excessive attention to the person, may disguise it, without destroying it. This smell is neither insupportable nor disagreeable to women who know how to estimate it; and often produces in them, by the association of ideas, grief, desire, hope, &c.

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In respect of climate, light, and the action of caloric, increase the smell of human beings, as well as of the other productions of human nature.

Aliment will, in like manner, influence the smell exhaling from man ; and the opposite mode of living between the inhabitants of Quercy, and those of Upper Auvergne, has, in respect of smell, effects as different as the causes producing them.

Spirituuous liquors, vegetable or animal diet, equally vary the smells which we exhale, and communicate to each individual a peculiar atmosphere.

The smell of old age is similar to that of childhood : it becomes insipid and sweetish in the cells of monks, in hospitals, and prisons.

The professions which produce particular smells, are those of butchers, tanners, candlemakers, and sizers of paper.

These observations on smell are insufficient for the physician. It is also necessary for him to attend to all those which depend on certain local dispositions, or diseases ; febrile patients, phthisical persons, and women after child-birth, and certain kinds of ulcers, exhale particular odours. Brieude has not, perhaps, insisted sufficiently on the febrile odour ; on those of putrid and malignant fevers ; on that mouse-smell (*odeur de souris*), as the practitioners call it, which prevails in hospitals and jail-fevers. From the gangrenous humid ulcers of hospitals, there arises also a very particular smell, which may be marked as a symptom. Cadaverous stools, their modifications in different epochs of a disease, ought in like manner to be attentively examined by the smell, and would thus become the source of very important medical indications.

*Chemical Observations on the Epidermis :---By I. A. CHAPTAL.*

THE human skin is perhaps that which exhibits the Epidermis most conspicuously, and easily to be removed : upon it have been made the experiments which I now proceed to detail.

The human skin becomes hardened by means of hot water, and separates into two distinct parts, the epidermis and cutis : the latter of which has the consistence of soft cartilage.

The continued action of hot water will at last dissolve the cutis, and yet not sensibly attack the epidermis.

Alkohol

Alkohol topically applied to the epidermis, makes no impression upon it: caustic alkali dissolves it; lime produces the same effect, but more slowly.

There is therefore an analogy between the external covering of the human body and that which covers silk-pods.

From these principles we may draw some consequences that may be easily applied to the operations of tanning.

1. If a skin, covered with its epidermis, be plunged into an infusion of tan, the tan will only penetrate the flesh-side; the other side being defended by the epidermis, which is not susceptible of the tanning principle.

2. When the epidermis is taken off, by the operation of peeling, then the tan penetrates the surface of the skin.

3. The lime generally used in this process, appears only to act in dissolving the epidermis. Lime-water has more action than lime not dissolved; but, its effect ceases the moment the lime held in solution is combined: hence the necessity of renewing the lime-water, to accomplish the taking off the skin.

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*Extract of a Report on the Means of purifying the Air in Sick Chambers, from Infection :—By J. B. VAN MONS.*

(From the Transactions of the Medical Society of Brussels.)

I HAVE in general found the air in the chambers of sick persons composed of a quantity of carbonic acid gas, hydrogen gas, oxygen and azote, with, sometimes, a small portion of ammoniacal gas, and of that particular emanation, which is called contagious miasma, and which appears to be a peculiar combination of carbonated hydrogen gas, with those particles, the nature of which is as yet little known. The hydrogen gas, however, generally holds in solution, pure carbon, phosphorus, &c. hence arises the disagreeable smell of these airs. The carbonic acid gas would form a much more considerable part of the air which surrounds the sick, if that gas were not continually condensed, either by the ammonia generated and disengaged in all diseases, or by the decomposition of animal substances containing azote. We have seen into what contradictions those have fallen, who have admitted in the air, at the same time, the carbonic and ammoniacal gas. We have, in like manner, seen the want of just conclusion, in exposing vessels filled with lime-water, in chambers, the inconvenience of which is, in every case, to leave or introduce into the air, the ammoniacal gas, by the  
absorption

absorption of the carbonic gas, and sometimes to condense an irrespirable gas.

I am satisfied, that in a state of health we form more water, in sickness more carbonic acid. The carbon appears to require a certain temperature, to exercise a stronger attraction upon the oxygen, than the hydrogen.

*(The remaining part of this article is occupied with the means of purifying infected air, and of adding to it a portion of respirable air.)*

Among the first means, I class water in a state of vapour, which is hurtful to few sick persons, and which, being a better solvent, precipitates the volatile and putrid emanations, more readily than the muriatic and acetous acids. When the air is surcharged with ammonia, I think it better to disengage it by means of the carbonic acid, than by vinegar or any other acid. The case, in which Citizen Guyton successively employed the gaseous muriatic acid, is altogether different from those of which we now treat.

The sulphurous acid gas might be, in some cases, used for decomposing miasmata by overcoming them with its oxygen; but it leaves behind an oxyd of sulphur, the smell of which is very injurious. The oxygenous muriatic gas is therefore preferable.

The gases which I consider as increasing the irrespirable portion of air, are the carbonic acid, and the hydrogen. The former ought to be passed through water, and the latter through oil. The carbonic acid gas is by this process deprived of the portion of acid which is employed to disengage it, and the carbon is precipitated from the hydrogenous gas which holds it in solution. — The oil, after having been for some time thus used, becomes quite black, and is changed into empyreumatic or carbonated oil.

### *Further Account of Dr. W. CURRIE'S Observations on the Causes and Cure of Remitting Bilious Fevers.*

IN the 'Critical Retrospect' of our first Number, p. 105, we gave only the general result of Dr. Currie's inquiry into the nature and origin of the bilious and yellow fevers; in this place, we propose to gratify our readers with some leading particulars of that interesting publication.

The nature of the work, and the design of the author are set forth in his introduction, in these terms:—

“ The following production (the result of much reading, reflection, and considerable

considerable experience,) contains observations on the situations, climates, and seasons, in which *remitting* or *bilious fevers*, are most prevalent; the causes from which they originate; the circumstances which render them epidemic: remarks on Sydenham's doctrine on the influence of constitutions or conditions of the atmosphere; an examination of the question, whether intermittents or remittents are contagious or not? and a comparison of their distinguishing symptoms with those of the contagious fever commonly called the yellow fever, which has occasioned so much mortality and distress in different sea-port towns of the United States of America, since the year 1793; with a description of the remitting fever, as it appears in Philadelphia: and the method of treatment which the author has experienced to be most successful.

"An abstract is also annexed of the opinions and observations of almost all the physicians that have practised in different ages, and in different climates, which have come to the author's knowledge, that he thinks worthy of notice; the object of which is to furnish those at a distance from public libraries with a compendious and connected view of every thing interesting that has been published, and that lies scattered in a multitude of volumes on the subject; free from the perversions of fallacious and misleading theory, or the misrepresentations of uncharitable and distorting party spirit."

Under the title of *Observations on Bilious Fevers*, the author, after defining the term bilious fever, proceeds to enumerate various countries and situations, in different parts of the world, which are subject to this disease; which he very justly remarks, "is amazingly influenced in its aspect and symptoms, by the soil, situation, climate, season, and by the preceding and present qualities of the atmosphere, and the customary mode of living of the inhabitants.

The principal part of Dr. Currie's publication consists of '*An Abstract of the Opinions and Practice in febrile diseases of Physicians of different countries*,' &c. with occasional remarks preceded by Dr. Buel's Account of the Sheffield fevers of 1793, 1794, and 1795 (from Webster's Collection), and two letters to the author from Dr. Johnson, of Talbot County, Pennsylvania, and Drs. Taylor and Hansford, of Norfolk—extending in the whole from the 79th to the 206th page inclusive. In this abstract, after a hasty sketch of the opinions and practice of several of the ancient, and of the earlier modern physicians, the author proceeds to display, in their own words, generally, those of Hoffman, Pringle, Cleghorn, Huxham, Morgagni, Tissot, De Monchy, Lind, Badenoch, Rush, Baker, Cullen, Blane, Moseley, R. Jackson, G. Fordyce, Paterson, and Wade, at various length; and the conclusion which he derives from this copious survey of the writings of others, is, "that the remitting, or bilious fever, as it is commonly called, is only a variety of the intermit-  
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ting fever, occasioned by an invisible matter (known to exist only from its effects) derived from dead animal and vegetable matter, in a state of putrefaction; that it is distinguished by an evident remission or abatement, but not a total suspension or cessation, of all the febrile symptoms, once in the course of every twenty-four hours, most commonly in the morning, and a renewal and increase of the same before the evening, differing in this as well as other circumstances, from the typhus, or continued fever, occasioned by human contagion, in which there is almost always an exacerbation, or increase of the fever, later in the evening; that the nearer it approaches to, or resembles the intermitting type, the greater is the prospect of safety; that the paroxysms are prolonged, and intermissions prevented, or rendered imperfect by two opposite circumstances, viz. by a *phlogistic* diathesis, and by preternatural *depression of strength*; that this kind of fever is not contagious, or communicated from one person to another; and that it differs from the malignant yellow fever, not only in that respect, but in its causes, nature, and symptoms, as well as in the remedies requisite for its cure." And finally, "that no general or infallible rule can be established, with regard to blood-letting in remitting fevers, derived from marsh-miasmata. Indeed it is observable, that of all the late writers quoted by Dr. Currie, Dr. Moseley is the only one who decidedly recommends venesection.

To this 'Abstract,' Dr. Currie has prefixed a "*Description of the Bilious Remitting Fever, as it usually appears in Philadelphia, on summer and autumn,*" drawn up with equal perspicuity and precision. His remarks on the predisponent causes, prognosis and on the weather, are valuable. The Doctor's plan of cure consists in removing the patient to a dry situation and pure air, after the remote causes of the disease have been subdued; and in procuring such an intermission of the symptoms, as shall admit of the administration of the Peruvian bark. To this end, bleeding is recommended; an operation which our author has sometimes found it requisite to repeat (from ten to twelve ounces) every day, to a fifth time; and in a few cases, he has opened a vein twice a-day. Calomel is particularly preferred, upon the authority of Drs. *Balfour, Clarke, Wade, Chisholm*, and others, as a purgative, and, joined with opium, to take off the irritability of the stomach; sweating by means of antimonials, is deemed necessary to procure an intermission; and the cold bath, upon the credit of Dr. *R. Jackson*, when the stomach rejects the bark—which the author advises to be given by injection into the bowels, as well as by the mouth. To reduce the dropsical swellings which sometimes succeed, ten or fifteen grains of potass, two or three times a-day, in some bitter draught, are directed; in more troublesome cases, the digitalis, squilla alternated with chalybeates, mercurial frictions," &c. &c.

*An Analysis of FOURCROY's Observations on the Experiments made by the English Chemist MAYOW, towards the End of the seventeenth Century.*

[Extracted from the "Annales de Chimie," No. 85.]

THE author begins with observing, that MAYOW's discoveries were not made known to the world, till his works were reprinted in 1790, in England; that LAVOISIER took no notice of this chemist, who without dispute preceded BOYLE and HALES in the path generally believed to have been opened by these illustrious philosophers; and that Mayow had even proceeded farther, and more decisively, than his predecessors before-mentioned. Mayow's work seems to present a variety of truths and discoveries brought forward by the chemists of the present day. The correspondence of his ideas with the present pneumatic doctrine is striking. It is therefore just, says FOURCROY, to restore to the memory of this physician what is due to him; but it is also just to point out the difference between the discoveries, and even the experiments of Mayow, ingenious and conclusive as they appear, and the exact researches of the philosophers of our day, as well as the certain results drawn from thence.

John Mayow, physician in London, published at Oxford, in 1669, a work containing five Latin Dissertations, which were reprinted together in 1674, and 1681, under the title—"Johannis Mayow, &c. opera omnia medico-physica, tractatibus quinque comprehensa." Two of these treatises, the one *On saltpetre and the nitro-aërial spirit*, and the other *On respiration*, contain a number of singular and new ideas, on the agency of the air in combustion and respiration; on its diminution and absorption by these two phenomena; on the analogy subsisting between air and nitre in supporting inflammation: on the identity of the principle of air with the acid of nitre, and on the formation of that acid by the igneo-aërial spirit. We find here asserted, in the clearest and most positive manner, that the blood absorbs a part of the air called vital; that the blood is heated by that absorption, or by the presence of the air in the lungs. Mayow also demonstrates that the red colour of blood, and the change of venous into arterial blood, depend entirely on its contact with the atmospheric air. In a word, this work contains a number of ideas, which have now become demonstrated truths, since natural philosophy and chemistry have determined the real influence of the air in combustion, in the calcination of metals, and the formation of acids: and if Mayow had been able to exhibit, in a separate state, the vital air of the atmosphere, and extract the substances therein absorbed, or held in solu-



tion; if he had known its essential properties, and described them in a clear and distinct manner, he would have established the whole basis of modern theory of combustion; the formation of acids; and of respiration;—of which he has, however, given only a general data.

The point of view in which Fourcroy proposes to consider this subject, is to present a succession of machines, apparatus, and medico-chemical processes, by means of which Mayow endeavoured to ascertain, by experiments, the action of inflammable bodies, and the respiration of animals on the air, as well as the reciprocal influence of the air on these phenomena: taking at the same time a view of the principal theories of that author.

In examining the fifth plate of the work cited, and which is placed at the end of the fourth treatise, '*De motu musculari*,' opposite to page 383 of the Hague octavo edition, we are astonished to recognize, at once, the apparatus represented in six figures to be nearly the same, not only with those which Hales used, and had engraved fifty years posterior to this philosopher, without taking notice of, and perhaps even without being acquainted with those of Mayow, but also with the machines of Priestley and Lavoisier; contrivances which have been supposed to be perfectly new, a century after the discovery of the English physician. By these, particularly the glass retorts, he was able to determine, that air was in part fixed, or diminished and absorbed by combustion and respiration; that these two phenomena were attended with a similar effect; that this property of promoting the one or the other was peculiar to the air; in a word, that there was only one part of the air, namely, the most subtle and elastic, that could be called vital, and which served to promote inflammation and respiration.

Mayow's first and most important dissertation principally aims at explaining the nature of nitre; its spontaneous production; the analogy of its acid with the air; the existence of a principle in the atmosphere, of the same nature with nitre, which supports combustion, flame and life; a very active principle in all chemical phenomena, and in the properties of which we cannot but see the most striking correspondence with the vital air, or oxygenous gas, discovered by Priestley, a hundred years after.

In the seventh, eighth, and ninth chapters of the first treatise, Mayow describes the experiments by which he supports his theory of combustion and respiration, after having premised, that the air contains particles which he calls *nitro-aërial*, and which are necessary to produce fire; so that when that element is once deprived of these, the air can no longer renew inflammation; and, according to the degree in which it is thus deprived, it loses its form and elasticity;—he shews, that the flame being extinguished in a  
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cupping-glass applied to the skin, it caused a vacuum; the skin pressed by the external air, became prominent within the glass; and this vacuum, as well as the extinction of the flame, proceeds from the circumstance, that the nitro-aërial part was absorbed, and had lost its elasticity. To shew the manner in which Mayow proves this assertion, Fourcroy cites a variety of experiments from the seventh chapter of this dissertation, which he observes, appear to prove, that Mayow perfectly understood the influence of the air in respiration; that he had formed a conjecture of the nature of the atmosphere; that he conceived the absorption and true diminution of its vital part, by combustion and respiration; that, in a word, these passages would evince a glorious priority of discovery in Mayow; but from the subsequent passages it appears, that although he had proceeded to a certain length, in that course in which he had no competitor or successor for upwards of fifty years, yet that he did not go far enough, nor pursue his progress with that firmness which was necessary to ascertain and establish the truth.

In the 8th chapter, proceeds Fourcroy, Mayow speaks of the nitro-aërial spirit as absorbed by animals, "*De spiritu nitro-aëreo quatenus ab animalibus hauritur,*" and treats, at considerable length, of the phenomena of respiration, with respect to the air. He had, he says, in a former work, proved that the principal use of that function was to separate the air, and to unite to the mass of the blood, by means of the lungs, certain particles necessary to the support of life; that the air proceeding from the lungs of animals, is deprived of certain elastic parts, and its volume is therefore considerably diminished in proportion to the abstraction of the nitro-aërial particles. To describe the manner of that separation, and to prove that it is caused by penetrating into the mass of the blood, and depositing there such particles, he enumerates some experiments, which our limits will not permit us to detail, but which corroborate the evidence of his having arrived at the knowledge of the nitrous air or gas, without being sensible of the discovery; but here again there appears the same kind of diffidence and confused reasoning, which every where shews this ingenious discoverer to have been, in many respects, irresolute and not fully master of the grounds on which he proceeded; and still we read of the loss of elasticity of the nitro-aërial spirit, with a diminution of volume: he has, however, been aware that vapour, disengaged by the effervescence of the spirit of nitre with iron, did not proceed from the air, which was diminished only in proportion as the nitro-aërial spirit was exhausted. His intention is to explain, how that spirit is condensed by the blood, and to this end he directs the result of his experiments. He compares blood to a mixture of iron and acid, and  
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states them to be liable to a similar fermentation ; and as he explains the condensation of the nitro-aërial spirit by this fermentation, it is pretty evident, that to such fermentation of the blood—he attributes the same condensation in the process of respiration. Here, says Fourcroy, he seems to have got into false reasoning :—the fermentation of the blood proceeds from the condensation of the nitro-aërial spirit, and that condensation is produced by the fermentation of the blood;—the particles of that spirit being once condensed, he admits their introduction into the mass of the blood, and makes them, at the same time, very powerful agents. He attributes to them the red colour, the heat, and fluidity of the blood. From this cause, he believes, that the part of the blood is black, which is not in contact with the air, and of a florid colour in the contrary case ; that the venous is black, and the arterial remarkably red ; that violent exercise, as it accelerates inspiration, is overheating, as is also frequent voluntary respiration ; that the fever of the consumptive proceeds from the force with which the morbid matter in the lungs attracts and absorbs the nitro-aërial spirit, with which it enters into a strong fermentation ; that if the venous and arterial blood be placed in the vacuum of Boyle, the former presents only some globules, and the latter is entirely dissipated in froth. He further adds, that the nitro-aërial spirit gives the red colour to bodies in which it exists, not unlike the fuming spirit of nitre. He compares the heat produced by the condensation of this spirit in the lungs, to that generated by a flint eliciting sparks, and also attributes vitriolisation to the same cause.

Fourcroy proceeds to the ninth chapter of Mayow, and details from thence a variety of processes to convey the air or elastic emanation from one jar into another, or to admit a part of it, to transfer it from one vessel into another, to place them in a pneumatic receiver, in order to measure the dilation caused by the vacuum ; which is evidently the same with the process of this day, or that of Hales, and superior to that of Boyle.

This ninth chapter is an inquiry into the production of air. Mayow was not satisfied with discovering the elasticity of the vapour he attracted, by the effervescence of the spirit of nitre with iron ; he was further desirous to determine the analogy and difference of that vapour in proportion to common air. In this respect, the apparatus he employed, enabled him to extract, collect, and convey elastic fluids ; processes which have been since lost for above a century, and are only restored to us within these twenty years.

This article having been extended so far, we cannot go into a detail of the several apparatus and processes employed by our countryman in his discoveries,

veries. For these we must refer the reader to his works, and shall conclude by extracting Fourcroy's general observations, with which he accompanies his memoir.

" No philosopher, especially at the end of the last century, had treated of the theory of combustion and respiration, the comparison of these two natural phenomena, the reciprocal influence between them and the air, and the effects of that fluid, compared with those of nitre, on combustible bodies, at such length and so acutely as this English physician: no person had contrived so ingenious an apparatus and processes, altogether different from those employed by the philosophers of that day; nor made experiments so novel to discover the cause of the necessity of air in combustion, as well as in respiration; and, although neglected and unknown for more than a century, even condemned by his contemporaries as altogether futile, these pneumatic processes undoubtedly deserved to be rescued from the oblivion in which they have been buried, for one hundred and twenty-five years. But while we render every justice to Mayow, and his ingenious discoveries, some of which were far superior to the ideas of the most celebrated philosophers of that age, and much resemble the pursuits and acquirements of those of the present day; while I feel pleasure in avenging his memory of the inconceivable contempt, or at least indifference, shewn by his contemporaries to his brilliant researches, even among his compatriots, who are usually jealous of the glory of their country; I must say, that he did not push, so far as he might have done, the first data which presented themselves to him; that the thread of his discoveries was broken in his hands, and that he had little more than entered upon a career, of the extent of which he had no conception; that he was not even sufficiently struck with the novelty and importance of his first discoveries: that, instead of pursuing the path of experiment which his new processes pointed out, he gave himself up to hypothetical reasonings, which interrupted his progress, and threw him into an ocean of uncertainties and contradictions, in obliging him successively to admit and reject the condensation, diminution, absorption, and fixation of air; in a word, that while he seems to dispute with the first modern chemists the invention of the pneumatic chemical apparatus, he leaves them, at the same time, all the glory, and detracts nothing from their merits."

*Outlines of Medical Geography: being an Inquiry how far Calcareous Soils, or Strata, counteract the Septic Exhalations, which occasion Distempers of a febrile or pestilential Type.*

[Extracted from a Letter of Dr. MITCHELL, of New-York, to Dr. HAWORTH, of Oxford.]

IF there is any solidity in the observation made in my Letter to Dr. Beddoes of September 15, 1797, concerning the comparative mildness or rarity of pestilential and febrile distempers in countries underlaid with extensive strata of superficial *lime-stone*, as happens in some parts of the United States. then England ought to exhibit something of the same kind in the counties where *chalk* is very prevalent. I now set myself down to recollect what I remarked about calcareous earth, in travelling from Dover to London, and during a walk I once took from London to Oxford, and its environs, Woodstock, Blenheim, and back again.

The chalk cliffs, in the neighbourhood of Dover, are talked of by all persons who navigate the channel, or who barely pass from any of the opposite ports of France to this part of England. It has not been so generally noticed that the land from Folkstone, in Kent, or thereabout, along by South Foreland, and almost to Deal, together with a good part of the Isle of Thanet, including both Ramsgate and Margate, has a chalky bottom. Indeed, with very little interruption, the calcareous material prevails to a very considerable extent, on both sides of the road from Dover to Canterbury, and thence to Rochester. In short, I may say, it extends westward quite to the county of Surry, and passes into it by a tract almost as broad as the distance from Deptford to Westerham. This is the most healthy part of the country, as may appear by comparing it with the unwholesomeness of Oxney Isle, Romney Marsh, and the Isle of Sheppey, where not chalk, but siliceous sand, flint, clay, and loam, constitute the principal part of the soil. (See the Map prefixed to Mr. BOY'S General View of the Agriculture of the County of Kent. London, 1796.)

The chalk continues through part of Surry, Berkshire, much of Oxfordshire, quite into Gloucestershire, and prevails extensively in Buckinghamshire, Middlesex, and somewhat in Essex. Oxfordshire, though situated so far inland, is famous, in many places, for its petrifications and incrustations of calcareous earth. Through this cretaceous land run the Isis, the Charwall, the Windrush, the Evenlade, the Thames, and, according to Dr. FLOR'S enumeration, seventy other streams of inferior rank, whose collected waters pass through

through the enumerated chalky tracts to London, and the greater part of the distance thence to the sea.

The inferences to be drawn from these geographical facts are two ; 1st. That an extensive body of chalk, or calcareous earth, of very considerable breadth, tinctures, with its peculiar qualities, the soil of England, from the German ocean westward, to the hills, which separate the waters of the Severn from those of the Thames, in Gloucestershire ; 2dly, That the greater part of all the streams falling into the Thames, run through a country charged with calcareous earth, and consequently must be considerably impregnated with that material.

With regard to the first point ; if the *ceptic gas* or *effluvium* is, as experiments lead us to believe, of an acid nature, in that case it ought not to be very abundant, or long prevalent, as a cause of epidemic, malignant, and pestilential distempers, where the land is composed, in a great proportion, of calcareous earth ; or, if in any place, or at any time, it should happen that febrile disorders, of greater or less malignity or inveteracy, break out, this ought to happen in consequence of too much acid present for the chalk or lime to neutralize. On looking over the first authority that comes in my way, "*Martin's Natural History of England*," (the edition published in 1759,) I find Surry generally denominated "a pleasant country ;" Middlesex commended for its "exceedingly healthful air ;" Berkshire called "one of the most pleasant counties in England ;" Buckinghamshire said to possess an air generally good, especially on the Chiltern hills ; and, though the vale is dirty, "not so unhealthy as many other low lands in England, the soil being marle or chalk ;" and the eastern part of Gloucestershire, where the Evenlade and Windrush rivers arise, though less fertile than the western part of the county along the Severn, and more exposed to wind and cold, "makes amends by its healthfulness."

The healthfulness of Oxfordshire is almost proverbial ; and the judicious choice of King ALFRED has long been commended for pitching upon so wholesome a spot as that where the beautiful city of Oxford stands, as a seat for the Muses. This has been considered as very strikingly manifested by the two following circumstances :—1st. An observation of long standing, that although the small-pox is as frequent there as any where else, the effects of it are seldom fatal ; and 2d. that when the pestilence, in 1665, was spread in a manner over the whole kingdom, though the court, both houses of parliament, and the terms were held in the city of Oxford, yet the plague, notwithstanding, was never there at all.—(1 Martin, 368.)

On the other hand, where, along the fenny hundreds of Essex, the joint operation of the current of the Thames, and the tides of the ocean, has brought

brought together great bodies of sand and clay, that had been diffused through the water, and been deposited by it, together with all such remains of animal and vegetable matter as constitute the deep mould of those traets, the country abounds thereabout with septic exhalations, which are very injurious to the health of the inhabitants, where the neutralizing power of calcareous earth or chalk is wanting: and, as far as I can judge, a deficiency of the same material enters deeply into the explanation of the unhealthiness of the fens of Lincolnshire, and the adjoining hundreds of Fleg and Marsh-land in Norfolk.

It must be observed, however, although chalky and calcareous soils are thus destructive of that kind of air or vapour which produces agues, fevers, &c. that it does not follow, by the rule of contraries, that all sandy, loamy, gravelly, and clayey soils, must be unhealthy. This may, however, be remarked, that in the United States of America, the most sickly parts are the tracts along the Atlantic, where the land consists in pretty much the whole range from New-York to Florida, of silicious sand and clay, variously mingled, and tempered with more or less of mould, without any considerable admixture of calcareous earth; and this, when it occurs, consisting principally of concretions of marine shells, dug up in some parts of Virginia, and the other southern states. As to our cities, the scite of New-York is a sandy loam or gravel, except that part where the *plague* has usually prevailed hitherto, which is built upon salt meadow, miry swamp, and rotten trash. Philadelphia stands partly upon a sandy, and partly upon a stiff loamy or brick earth, impermeable to water, and destitute of a sufficient portion of calcareous earth to keep down and attach pestilential fluids. Of both these cities it may be remarked with truth, that although they were built in a bottom of *lime*, or *chalk itself*, there are local causes enough to engender the the worst forms of distempers, as happened at the famous assizes in Oxford, where the filth accumulated around the wretched criminals in prison, generated pestilential matter enough to poison a considerable number of the court and attendants.

As far as I can comprehend the subject, the general conclusion is this:—Countries abounding with calcareous earth, are mostly free from the ravages of wide-spreading epidemics, by reason of the power that material possesses of neutralizing the acid of putrefaction; though, from particular local causes, pestilence may be manufactured in places thus favourably circumstanced: while those places, which are most remarkable for the prevalence of malignant and pestilential diseases of that kind, consist of a soil through which chalk and lime are scantily scattered. England affords abundant proof of the former; the United States, of the latter observation.

To proceed now to the second point. The numerous streams of water, whose united body forms the Thames, run principally, it was said, through a tract of country, plentifully furnished with chalk. The form in which this calcareous earth is most prevalent, is that of carbonat, or in combination with fixed air, and capable in many places of being burnt to quick lime: though, doubtless, where the septic (nitric) acid exists, it unites with the earthy basis into calcareous nitre. There is, unquestionably, somewhat of a muriat of lime, especially below London-bridge, and the whole distance thence, through the brackish and salt water, to the ocean. And perhaps there may be, in some places, a combination of the sulphuric acid with the calcareous matter, forming gypsum. The small quantity of gypsum which exists there, and if much did exist, the very trifling proportion of it which water is capable of dissolving, leave very little to be said concerning it here. The muriat of lime is there probably in too small proportion to be matter of consequence, any where above the flow of the salt water; and though, as CAMDEN says, the river swells as high as Richmond, which is sixty miles inland (*Britannia*, 187) with the tide, yet the salt reaches no great distance above Gravesend.

The septite of lime is soluble in water: but, as it is also a nutritive ingredient in manures, and easy of resolution into its constituent parts by plants, it is presumable that a large proportion of what is formed of that compound, undergoes decomposition on the soil where it is produced. The carbonat of lime, then, or common mild chalk; is the material upon which the streams of water, in the case before us, must principally act.

Water may work upon this mild calcareous earth in two ways: 1. by acting as a menstruum, or jointly with some substance which is a menstruum, and *chemically* dissolving it; and, 2. by *mechanical* attrition, wearing it away, reducing it to fine particles, and while it is diffused and floating through the liquid, carrying it down in its proper form, to be mingled and deposited with the various matter of intervale spots, alluvial shores, and secondary islands.

It is hard to determine what quantity of calcareous earth is brought down in these two modes, from the adjacent counties into the bed of the Thames, and hurried along with the stream towards its disembogement. When all circumstances of showers, rains, freshets, and the unceasing attestation of the streams along their channels, are taken into the account, the quantity would seem to be very considerable. This chalky substance, whether dissolved in the water, or diffused through it, cannot fail to modify and influence it remarkably; in an especial manner contributing to fertilize the low lands in the neighbourhood of the river, which it visits or overflows.



Thus the septic and other acids with which the Thames water is charged, are in a great measure, and perhaps quite, neutralized by the calcareous earth before it reaches London. The quality of the water there will be in a good degree determined, then, by the materials furnished by that city. The acid of putrefaction and other acids running into it from the sewers, will, under the existing regulations, be neutralized by the refuse alkaline matter of house-keeping, and other consumptive processes; and the pot-ash and soda thrown away in soap, &c. seem to more than counterbalance their opponents, and give a preponderating influence to the alkalis. Hence evidently proceeds the boasted softness of the Thames water, for the washing of linen; for enabling the London dyers to strike their bright and lasting colours; for keeping so well at sea as it does; and probably enabling it to extract, in a very complete manner, the substance of malt, to form their excellent porter. Is not all this confirmed by the fact known to navigators, that the Thames water, after long keeping, deposits a stony sediment on the bottoms of the casks?

That fertile tract of land, the Carse of Gowrie, in the county of Perth, in Scotland, which is reckoned to possess a climate more mild and favourable to vegetation than any part of that kingdom, affords direct evidence of the healthiness consequent upon using lime as a manure. The soil consists chiefly of rich clay, loam, and sharp gravel; and the inhabitants, until the year 1735, used to be subject to the ague. Then, one or two of the principal proprietors undertook, by draining, summer-fallowing, and sowing grass-seeds, to improve their estates. Accident led them to the discovery of the efficacy of lime on that soil, from observing the powerful effects of some old lime rubbish of decayed buildings, when spread on the corner of a field. The liming their lands then came gradually into use, and has since been generally adopted; the consequence of which is, *the ague has long disappeared*. Here seems to have been a beautiful experiment made upon about ninety-six square miles of country, where the septic steams that formerly gave the people agues, are now attracted by the lime, and turned to calcareous nitre; while increased productiveness of the land, and greater wholesomeness of the air, continue to be the happy consequences. (*Donaldson's General View, &c.* p. 12, *et seq.*) Some judgment may hence be formed, concerning the power of art in changing the face of nature. What a grand reflection, that an inconsiderable quantity of powdered lime strewed over the land, should thus coerce the matter of pestilence, and control the operations of the atmosphere!

In LINNÆUS's hypothesis (*I. Amœnitat. Academic.*) on the cause of intermittent fevers, we find a collection of facts to prove their connection with argillaceous earth, or clayey soil. Of this he was so well satisfied, that

he concluded, that attenuated particles of clay, taken into the body with food and drink, entered the blood, stuck in the extreme branches of the arteries, and brought on, as a true proximate cause, the symptoms of the disease.—(Hypothesis nova, § v.) The sensible inquirer will find, in his fourth section, an enumeration of all the parts of Sweden famous for intermittents, and for strata of argillaceous soil, and the authority of Mr. SANDEL, quoted as an eye-witness of the same coincidence of clayey bottoms and intermittent fevers in Pennsylvania. The facts I take to be indubitable. Linnæus has reasoned upon the subject, by considering argillaceous earth alone. I have viewed it in contrast with calcareous earth, that, by embracing a wider range of facts, the operation of the latter, in tempering the former, may be the better comprehended. Whether my theory is better founded than that of the Professor of Upsal, the experienced and candid will judge.

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*A concise Analysis of Professors HUFELAND and KANT'S  
Treatise on the Art of prolonging Life.*

**D**R. HUFELAND, of Jena, had sent to the Prussian philosopher KANT, a copy of his "*Macrobiothick*," or the art of prolonging life, (which has lately been translated into English,) and requested his opinion of that performance. The treatise now under consideration contains Kant's answer. It is intitled, "*On the faculty of the mind to conquer, by the simple act of the will, the sensations produced by diseases.*" It has been lately published by Dr. Hufeland, with his own observations on that subject.

Kant declares, that he is not an advocate for keeping the head and feet warm. The Russians, in their severe climate, adopt the contrary rule, which they even extend to the breast; yet they are not liable to catch cold. Although it may be more agreeable, it is a prejudicial custom to bathe the feet in warm water; for this practice produces a relaxation of the blood-vessels in the extremities, which is not unfrequently the case of incurable disorders of the legs and feet. It is however adviseable, during the rigorous season, carefully to guard the abdomen against cold.—Too much sleep he considers to be an enemy to longevity; it is apt to produce weakness and epilepsy in nervous habits; and, instead of affording nourishment, has a directly contrary effect: as has every degree of excessive care of the body. He justly considers equanimity of mind as a great means of preserving the body, and leading to old age. He observes, that having himself a flat and narrow chest, which allows little play to the heart and lungs, he is naturally hypochondriac; but the reflection that this malady, being purely mechanical, cannot be cured, makes him free from anxiety in that respect; although he

he cannot obviate the pain, yet he has resolution to be master of his thoughts and actions, so as to disengage his attention from it, as if it did not concern him. This firmness he also recommends in cases where persons, especially those in bad health, are prevented from enjoying sleep, and who ought, as much as possible, to divert their thoughts from the sensation of their pain, or other cause of anxiety, whether physical or mental, and direct them to some object less interesting; and at the same time to change their posture in bed.

Kant strongly dissuades literary men from study while they are eating or walking—"If a person at the same time fills the head and the belly, or considerably exercises the head and the feet; it will, in the former case, predispose him to hypochondriasis, and, in the latter, to epilepsy; it is necessary to employ the mind and body alternately." Walking in the open air promotes health, as it diminishes the attention, by dividing it among a variety of objects. On the contrary, when we walk, and at the same time meditate deeply, or still more when we engage in serious conversation with a companion, it is extremely fatiguing, and consequently prejudicial to health.

Kant having been troubled with a cold and cough, which frequently attacked him on going to bed, accustomed himself to hold his lips close, and breathe only through the nostrils, which had the effect of preventing the attacks of this disorder; he therefore recommends this custom to persons in general when they sleep, and also when they ride on horseback; adding, that this practice promotes the secretion of the saliva, which at once assists digestion, and encourages the necessary evacuations.

Kant next intreats Hufeland to take particular care of his eyes, and complains of the modern style of printing, as being extremely fatiguing to the sight. He censures the practice of reading rapidly, particularly running through a variety of newspapers, journals, &c. Both Kant and Hufeland complain of the colour of the ink used in printing; which, instead of being perfectly black, is generally almost grey. Hufeland gives the Roman characters the preference, and by way of joining example to precept, his '*Art of prolonging Life*,' in German, is printed in Roman letters—Kant prefers the German character.

There is not (says Hufeland) a surer way to shorten the thread of life, than to educate children in an anxious and delicate manner. Their organs and powers are by this means brought forward with similar precocity, as plants in a hot-house. An abuse of the sexual impulse accelerates, in an extraordinary degree, old age and death. Thus, too early marriages are unfavourable to longevity: in our climates, the man should be twenty-four, and the woman eighteen, before they enter into the connubial state. Too violent exercise

has

has often proved fatal to youth: "how often have I seen a lovely woman's health ruined by an immoderate passion for dancing! I have seen the rose suddenly fade, droop, and die."

The season in which children are born is by no means a matter of indifference. The spring is more favourable to longevity than winter: the infant then respires more freely, is better able to enjoy the fresh air, and is less liable to be kept too close and warm. The spring and summer have also a vivifying influence; and we see, that the animals born at that time, are the most healthy and stout.

*Rules respecting the faculty of thinking.*

1. We ought not to devote ourselves too much to serious thought, so as to neglect health: it is necessary sometimes to exercise the mind, and sometimes the body.

2. It is hurtful to reflect constantly upon the same subject; neither the mind nor the body should be always engaged in the same exercise.

3. Metaphysics and abstract ideas are infinitely more fatiguing to the mind than other thoughts.

4. Do not always intensely exert the mind in inventing or composing:—to read or transcribe occasionally will give a salutary relief.

5. To engage the mind in study, at too early a period of life, impairs the constitution. Every mental exertion, before seven years of age, is injurious to the body.

6. Reflections to which the mind is least disposed, will ever be the most fatiguing.

7. To excite the mind by stimulants, such as wine, opium, coffee, &c. is pernicious.—In case of necessity, however, a single cup of coffee is the most advisable expedient.

8. It is doubly prejudicial to health, to exercise the mind while the stomach is employed in digestion. Thinking requires then extraordinary efforts, and renders the progress of digestion much more difficult.

9. We ought, as much as possible, to avoid reflection at the time of going to bed, or when we awake in the night.

10. It is improper, always to study in our chamber, and in a confined, or inconvenient attitude: we should occasionally lie down, stand, or repair to the open air.

Among the things which shorten life, none has greater influence than fermented liquors of every kind—"it is swallowing liquid fire, which in a shocking degree accelerates the consumption of vitality, and literally makes life a process of combustion." The use of these liquors is not only productive of a variety of diseases, but dreadfully impairs sensibility, both moral and physical;

physical; and it may be remarked, that a person addicted to drinking spirits is so completely burnt up, as to be insusceptible of irritation; and, when he is attacked by disease, medicines have rarely the effect of affording him relief.

The author's remarks on the venereal disorder are truly terrific. "The syphilitic virus combines every thing that is painful, loathsome, permanent, and dreadful. Yet we laugh at this murderous poison, and talk of it with pleasantry, as a fashionable complaint. We speak as lightly of it as of a cough or coryza, and we generally neglect to oppose its progress in our families with effectual remedies. No care is taken to check the rapid strides of this horrible contagion, which every where envenoms the vitals of society. My blood boils with indignation, when I see it making its way into the country, and attacking the peasants, formerly so healthy and robust, who form that nucleus which should preserve manhood in vigour and primitive purity. This dreadful scourge was, within these twenty years, not known, even by name, in villages where we now find two-thirds of the inhabitants infected. I clearly foresee, that this evil will continue to extend itself, so that no family will be free from its baneful influence: even the most virtuous and austere will be infected by nurses, servants, &c. It is time to form a barrier to oppose this destructive torrent; and I see no other means for that end, than to establish, upon more solid grounds, the empire of morality, especially among the higher classes; to institute a good police of health, and diligently to inform the world of the nature of this poison, its dangerous consequences, its symptoms, and the best means of prevention."

"The measles and small-pox are certainly not *necessary* evils: they may be avoided; and if general measures were taken for that end, those loathsome disorders might undoubtedly be extirpated. The execution of this plan has been indeed already attempted, in some countries; and the endeavours of the respectable Professor JUNKER, to effect so desirable a purpose, are highly praise-worthy; but, as it cannot be expected, that this measure will be universally adopted, while there are found even physicians to oppose it, it only remains to render the poison as mild as possible; which experience shews is best effected by the practice of inoculation."

Mr. Hufeland proceeds to consider the possibility of extirpating the small-pox, which he calculates might be effected in the course of four years, if, throughout the whole of civilized Europe, the infected were immediately prevented from communication with the healthy. Too much praise cannot be bestowed on those governments which have interested themselves to carry  
this

this scheme into effect, particularly the southern parts of Prussia. We cannot, however, but regret that there are governments which have refused to second the philanthropic intentions of a man so zealous in the cause of humanity ; and it is still more distressing, that there are physicians so selfish as to deny their assistance to this benevolent plan, because it would diminish the profits of their profession. And, were an attempt to be made to exterminate the venereal disease, it would undoubtedly meet a still greater opposition, from similar motives of interest.

Our limits will not allow us to extend farther the account of this interesting work, and particularly to insert the author's valuable practical maxims for the conduct of the aged. In a future number, we shall gratify our readers with this part of the treatise.

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*On the practical Study of Botany, by means of chemical Analysis: chiefly abridged from the original Papers of Dr. T. S. HERMSTAEDT, &c.*

[Continued from No. II. p. 159—165.]

IN the chemical analysis of a vegetable substance, we propose either to inquire into the nature of its formative elements, or to discover the causes of its medicinal virtues. In the former view, the greater number of vegetable bodies display a remarkable coincidence or similarity in those constituent parts which we are enabled to exhibit in a separate state : while those, the knowledge of whose respective properties, in a distinct form, would be of the greatest advantage, but rarely admit of being separately exhibited. With regard to the latter case, the chemical analysis of a vegetable substance cannot afford us any instruction, concerning the capacity of that substance to produce positive effects in the animal body ; and were we to undertake the analysis of organic bodies with that intention, it would be productive of no advantage. Notwithstanding these restrictions, the chemical analysis of such a substance, if undertaken according to determinate principles, may pave a sure way to the discovery of those elements, on which its medicinal effect principally depends ; and, in this view, our chemical experiments on vegetables must be attended with obvious advantage to the therapeutic practitioner.

If we discover the specific power of a plant, or any particular part of it, such as the root, the leaf, the flower, the wood, the bark, the fruit, &c. we always find ourselves indebted, for this discovery, to the use of it in substance. The reflecting medical practitioner will, upon this occasion, ever inquire, what principle gave this plant its medicinal power? was it really a particular constituent

constituent part of it, or was it the whole plant, or the whole of its substance, which produced that effect? The discovery of this circumstance is naturally the first and most important point of view, in which the chemist attempts a scientific analysis of plants, with respect to their medicinal properties.

We may consider every plant, or its particular parts, as a compound of various heterogeneous constituents. We shall find that the whole of its active powers were determined either by a particular constituent part of it, or that its virtue depended on a combination of two different constituents; or lastly, on the combined activity of all its elementary parts. The usual process formerly adopted by chemists, was that of ascertaining the proportion of watery, oleaginous, or pure gummy parts contained in such a plant, and the particular essence or tincture which it afforded. Such a chemical analysis must naturally have been very fallacious, and altogether unfit for illustrating the medicinal powers of plants; as in this manner the greater number of them could not exhibit any remarkable difference.

A true chemical decomposition of a vegetable body, on the contrary, will prove, that such a body is necessarily compounded of a great variety of heterogeneous ingredients, which, by chemical process, can be separated from each other, and exhibited as distinct substances. If we succeed in this attempt, so that none of the different constituents is thereby changed in its nature, its efficient power must consequently remain unaltered. If, in this manner, we shall reduce a vegetable body to its proximate elementary parts, that is, such as are not subject to any farther change, then only are we enabled to ascertain with plausibility, the medicinal effects of each individual constituent part. Should it therefore be found, that one of these parts is capable of producing that effect, which we have formerly observed to take place from the use of the whole plant in its integral state, we may justly conclude, that this part alone contains its medicinal virtue. If, however, it should be observed, that none of the individual constituents manifest this power, it will then be necessary to recur to experiment, whether a combination of two, three, or more of them, previously discovered, or all of them jointly, are capable of producing that effect.—After having thus learned by experience the knowledge of that substance which is the principal agent in a particular plant, we shall then be enabled to judge, what medicines may be prepared from it, and what chemical process ought to be adopted in such preparation. This is the only true point of view in which the chemical analysis of a plant should be undertaken, if the inquirer expects to improve the *Materia Medica* by such pursuits.

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An accurate examination of vegetable bodies will readily inform us, that those elements, of which nature has composed them, may be aptly divided into

into parts mixed in an *aggregate form*; and into parts *chemically combined*. Among the former are comprehended those vegetable ingredients, the presence of which may be discovered without recurring to chemical analysis, which consequently can be exhibited as distinct objects, without a complete decomposition of the elementary mixture of such vegetables. Of this nature are, 1. water; 2. the saccharine ingredient; 3. the basis of oil; 4. that of camphor; 5. fat, &c. All those parts, on the contrary, which are so intimately blended, that they can only be recognized and exhibited after a complete dissolution of the elementary mixture, justly deserve to be denominated *constituent* parts, or elements chemically combined.

From the tables of elementary constituents already exhibited \*, in which the primary, as well as the secondary elements of vegetable bodies; together with the simple vegetable acids, have been enumerated, it is obvious, that such bodies contain a considerable number of heterogeneous ingredients. It is hence also self-evident, that a chemical analysis of this kind, to be rendered productive of real utility, will require an uncommon degree of accuracy, and indefatigable perseverance.

As it is not in every instance, even with the most experienced chemical inquirer, an easy matter to determine, to what particular constituent parts he ought to direct his attention, in analysing a vegetable body; it appears to be equally useful and necessary, to specify some chemical tests, or re-agents, by means of which he may previously ascertain the general constituent parts of any particular plant, with a certainty similar to that with which he has long been accustomed to ascertain those of mineral waters.

The following is a list of the chemical re-agents hitherto used by Dr. Hermbstaedt, the number of which, however, might be considerably increased :—

1. A perfectly pure *alcohol*.
2. A very pure *vitriolic ether*, which is freed from water, as well as spirit of wine.
3. Pure *distilled water*.
4. A somewhat concentrated solution of the *acetite of barytes*.
5. A solution of the *muriet of lime*.
6. A saturated solution of the *muriet of iron*, which ought to be afterwards diluted with water.
7. A solution of the *sulphat of silver*.
8. A highly concentrated *acetic acid*.

9. Rectified

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\* See No. I. p. 75, and No. II. pp. 159. 162.



9. Rectified *etroleum*, or rock-oil.
10. A concentrated solution of pure kali or potass, or *caustic vegetable alkali*.
11. A solution of the *acetite of lead*.
12. *Blue turnsol paper*, or *litmus*, properly prepared.
13. *Caustic spirit of sal ammoniac*, or *aqua ammoniæ puræ*.
14. *Carbonat of potass*, or *kali præparatum in crystals*.
15. A very pure *nitric acid*; and—
16. A *concentrated vitriolic acid*.

*Of the Method of employing these Re-agents.*

In order previously to examine, by means of these re-agents, the constituent parts of a particular vegetable body, we ought to procure small glass retorts, containing about one ounce measure. Such vessels are convenient not only for making experiments, on a small scale, with vegetable bodies, but likewise with any other substances. With such an apparatus, and the necessary re-agents before enumerated, we may confidently begin our experimental inquiries in the manner following:—

A. To ascertain the presence of *resinous matter*, a small quantity of the powder of the vegetable substance under experiment is placed in a glass retort, with three times its weight of vitriolic ether; the whole is allowed to stand for half an hour in the open air, if in summer, or in a moderately warm room if in winter, occasionally shaking the vessel. If during that time, the ether swimming on the top has not changed its colour, it is a certain criterion that no resinous particles are contained in the substance under examination. On the contrary, as the ether is more or less tinged, the quantity present of the resinous matter may be inferred.

B. The *saponaceous* principle may be easily discovered in substances yielding no resinous parts, by pouring on another small quantity, in the retort, three times the weight of alcohol, treating it in a manner similar to the preceding, and, if necessary, somewhat increasing the degree of heat. If the alcohol remain untinged, the vegetable contains no saponaceous matters, as these would be held in solution by the alcohol. According to another process, the examination of a substance, as to its resinous and saponaceous ingredients, may be undertaken at one and the same time. As alcohol is capable of dissolving both ingredients, the vegetable body only requires to be digested in that liquid. If after this process, the clear solution, being poured into six times the quantity of cold water, become turbid, the presence of resin is then manifest; but if no turbidness arise, it contained only saponaceous matter.

C. To

C. To prove the existence of *saccharine* matter, we ought to attend to the following circumstance. If by the preceding test the presence of saponaceous matter has been already discovered, the same vegetable body may be subjected to the test of alcohol, in a more elevated temperature. Thus the saccharine ingredient will be likewise separated, and may be afterwards obtained by crystallising the sugar in a reduced temperature.

D. The matter of *gum* may be separated from vegetable substances, by extraction, in a moderate heat, with distilled water. Should the solution be turbid, which would indicate, that it is also mixed with resinous particles, it ought to stand till it become cool, and then be filtered through porous paper: the clear fluid must next be evaporated until, in a cold place, it acquire the consistency of a thin syrup. In this state three parts of alcohol, exposed to a reduced temperature, must be poured upon it; and if a complete solution take place, we may then conclude, that the whole of it consisted of pure matter of soap, without any particles of gum; for, if the latter had been present, it would have been separated from this fluid in tender flakes.

E. The presence of *mucilage* can be ascertained in a manner analogous to the preceding, as the same solvents are applicable to both. But in order to distinguish it, with sufficient accuracy, from the substance of gum, as has already been pointed out, (No. I. page 75, of this Journal,) it is indispensably necessary to attend to the following particulars: whether the separated matter be slippery between the fingers, or whether it can be drawn in threads. Besides, the presence of mucilaginous matter in some bodies, such as the orchis, marshmallows, &c. may be readily discovered from their farinaceous nature, as well as by gelatinous solutions of them, made in simple water.

F. The presence of *albuminous* matter in vegetables, may be ascertained in two different ways, according as they are in a *fresh* or *dried* state. In the former it is only necessary to bruise a small quantity of the substance under experiment, to express the sap, to filter it through paper, and to divide the clear liquid into two parts: one of these parts is to be mixed with half its quantity of alcohol, and if no turbidness or precipitation take place, we may be convinced, that it contains neither matters of gum, mucilage, nor albumen. But if the liquor should become turbid, this circumstance may indicate the presence of either albuminous, gummy, or mucilaginous ingredients. In this case, the second portion of the clarified sap ought to be heated to the boiling point; and if it contain any albumen, it will be separated in small flakes, resembling those formed by boiling the white of

eggs

eggs in water to a hard consistence, and emitting the smell of burnt horn. If on the contrary, dried vegetables be the subject of experiment, the substance ought to be previously extracted by means of alkohol, and afterwards by the conjoined agency of water and heat. Should ammoniacal or other neutral salts be contained in them, they will pass over into the latter solution. If the substance should contain albuminous matter, this may be discovered from the viscid and elastic nature of the vegetable fibre which forms the residuum: in a perfectly dry state, this residuum, if placed on red-hot coals, acquires a hard horny form, and emits the empyreumatic smell of horn.

G. If we surmise the existence of *elastic gum* as a part of a vegetable body, it ought to be treated in the manner before mentioned, first, by alkohol, and then by water; the residuum ought afterwards to be well digested in double its quantity of rectified *petroleum*, or of *vitriolic ether*. This solution must be mixed with an equal part of alkohol; in that state it either remains unchanged, or a precipitate is formed, consisting of a viscid, greasy substance, which takes fire upon being exposed to a candle, and emits the smell of burnt bacon; in this latter case, the inflammable substance is the elastic resin, the presence of which was designed to be discovered by the experiment.

H. The matter of *wax*, as forming an ingredient in many vegetables, is discoverable partly from their shining surface, partly from a certain flexibility in such bodies. In order to ascertain its presence, a sufficient quantity of the substance under experiment ought to be infused in four times its weight of water of pure ammonia, or *caustic spirit of sal ammoniac*, and kept for some time in a state of digestion. After sufficient maceration, the liquor is carefully expressed, filtered, and mixed with such a quantity of distilled vinegar, as may render it a predominant ingredient of the compound. Thus a pale yellow powder is precipitated, which frequently consists of a combination of waxy and resinous particles. If this powder be infused in alkohol, the resinous parts will be completely dissolved, while those of wax remain behind.

I. The *astringent principle* may be readily discovered. A few drops of a spirituous or watery extract of a vegetable substance, should be poured into a glass vessel, containing distilled water: to this mixture a drop or two of a solution of the muriat of iron, should be added and stirred up with it. By this addition the astringent principle will immediately shew itself, by changing the colour of the mixture to a black or reddish brown.

K. Although the *acid or pungent principle*, cannot always be discovered by the taste and flavour of vegetable substances, yet it is not difficult to determine

mine the presence of that principal, by distilling them in simple water. The product will thus manifest a considerable degree of pungency; and in this manner Professor Hermbstaedt was enabled to exhibit to the senses the pungent principal, as a constituent even of the lesser centaury. (*Gentiana centaurium. Lin.*)

[To be continued in the next Number.]

*A comparative View of the principal Theories, which have prevailed in Chemistry, &c. By Dr. FRANK, Sen. of Vienna.*

[Continued from Numb. II. pp. 170—179.]

ACCORDING to the ideas of Dr. RICHTER, *light* is compounded of caloric, and that basis which is an essential constituent part of all combustible bodies; the latter of these constituents, the author terms *brennstoff*, or the *basis of inflammability*.

The matters of *heat* and *light*, are, in his opinion, completely imponderable, and obey no laws of coercion. With respect to the former, he admits the principles established by the antiphlogistic system, in their full extent.

*Light* is generated only in the decomposition of combustible bodies. The basis of it is disengaged from these, dissolved or evolved in the matter of heat, and thus light is formed. This phenomenon, however, can take place only under the condition, that a *certain* and *determinate quantity* prevail in both elements. If this quantitative proportion does not subsist, for instance, if there be too little caloric, no light will arise, but merely heat.

Light passes through the pores of *transparent* bodies, without undergoing any change; but it is *decomposed* by the *opaque*. They absorb its basis, and disengage the caloric, with which the latter is combined. Colours and their different shades depend upon the degree of this decomposition, or in other words, on the variously-modified proportion subsisting between caloric and *brennstoff*.

*Vital air* consists of a *peculiar substance*, rendered elastic by means of caloric. Besides this elastic form, vital air, as well as the basis of light, and *brennstoff*, can be obtained only by uniting with other bodies, which the author terms, *substrata*. In combination with *nitrogen gas* (azote) it forms atmospheric air. The nitrogen gas is the base or matter of *nitra*, rendered elastic

elastic by caloric, which matter again consists of a *peculiar substratum*, and the *basis of light*.

The *hydrogen gas* likewise consist of a substratum combined with *brennstoff* and *caloric*.

*Water* is compounded of the *base of vital air* and the *substratum of hydrogen*; it is produced when both substances are together subjected to inflammation in a gaseous state. The *brennstoff* of the hydrogen gas then enters into combination with the caloric of the vital air, and forms light; thus the substratum of the former, and the basis of the latter, become liberated, and unite in forming water.

A similar double elective attraction takes place in every process of combustion. The *brennstoff* of combustible bodies, always combines with the caloric of vital air (by which alone the decomposition of these bodies is practicable) and produces free light; but the substrata of combustible matters enter into union with the basis of vital air, a process by which the *mineral acid waters*, as well as the *calciform metals* are produced, the weight of which uniformly corresponds with the weight of the bodies subjected to combustion, and that of the vital air thus decomposed.

In this manner, from a combination of the *basis of vital air*, with the *substratum of carbon, sulphur and phosphorus*, arise the *carbonic, sulphuric, and phosphoric acids*; as, on the contrary, by the *substrata of metals*, are generated the *metallic calves*.

Combined with the *basis of nitra*, the *basis of vital air* generates the *nitric acid*: with the *basis of muria*, the nature of which has not yet been discovered, the *muratic acid* is produced.

All substrata which, by their combination with the basis of vital air have been dephlogisticated, or deprived of their inflammable base, again return to their pristine state; if in an elevated temperature, a phlogisticated substratum be brought in contact with them, that is, such a substratum as has a greater affinity with the base of vital air than with that of light. The substrata exchange the base combined with each, and assume new forms. Such is the case in the regeneration of sulphur and phosphorus from their acids, as well as of the metals from their oxyds containing vital air, (*semi-acids*;) by treating them with carbon. This substance imparts its inflammable basis to the substrata, and at the same time unites with their basis of vital air, whereby it is changed into *fixed air* (carbonic acid gas).

From the same cause, we can account for the decomposition of water. The carbon deprives it of its base of vital air, and imparts its base of light

to the substratum of hydrogen. Thus arise the carbonic acid and hydrogen, both which obtain their gaseous form, by the caloric disengaged in this process.

Some metallic substrata, however, combined with the base of vital air, are capable of decomposing light, in an elevated temperature; of fixing its base, and thus of reassuming the metallic form: of this nature for instance are the oxyds of mercury; the base of vital air disengaged on this occasion must necessarily appear in the form of gas, because it is rendered elastic by the caloric there present\*.

This concise outline of Dr. Richter's system will be sufficient to afford the reader a specimen of his ingenious method of reasoning. Some learned German chemists, indeed, have already paid homage to this new system, among whom we observe the names of GREEN† and LEONHARDI. This circumstance, however, will not readily induce the adherents of the antiphlogistic school to adopt Richter's new system of chemistry; nor is it probable, that the followers of Lavoisier will be easily persuaded to desert the standard of the French school.

Among the rational sceptics in chemistry, Professor GOETTLING, of Jena, stands conspicuous: he is equally dissatisfied with the system of Richter, and that of Lavoisier, for explaining the phenomena of light. The observation, that phosphorus emits light in azotic gas, and is changed into acid, induced him to make numerous experiments on this subject, from the results of which he draws the following conclusions, and thus attempts to settle the difference between the two systems.

The phenomenon of light depends on the liberation of a peculiar element, which he terms *lichtstoff*, or the basis of light.

This substance is a constituent part of all inflammable bodies.

Combined with caloric, which the author conceives according to the definition given of it by the antiphlogistic school, but terms *basis of fire*, he affirms that *lichtstoff* forms fire.

Oxygen is not only evolved after being rendered elastic, by the influence of caloric, but likewise appears in a gaseous form, combined with *lichtstoff*. To the former combination (oxygen gas) he gives the name of *pyrogen* air; the latter (azote) he terms *lichtstoffluft*, or *luminating air*. And from a mixture

\* On the Modern Objects of Chemistry: By I. B. RICHTER. (in German) No. 3. 8vo. Breslau and Hirschberg. 1793.

† Manual of Chemistry: Second Edition, 4 vols. 8vo. Halle. 1794.

mixture of these two substances, he accounts for the composition of atmospheric air.

With *hydrogen*, (which, when combined with *lichtstoff*, appears in the form of *hydrogenous gas*) *oxygen* produces *water*—an hypothesis also consistent with the principles of the antiphlogistic system.

With the *bases* of *carbon*, *sulphur*, and *phosphorus*, (which, in combination with *lichtstoff* constitute *carbon*, *sulphur*, and *phosphorus*). Goettling endeavours to demonstrate the composition of the *carbonic*, *sulphuric*, and *phosphoric acids*.

*Nitric acid* is, according to him, produced by an intimate combination of the *bases of nitra* with the respective *matters of light* and *heat*.

The *muviatic acid*, as well as the *pure vegetable alkali*, apparently consist of the same elementary bases as the nitric acid, but united in *different* proportions.

The *vegetable acids* have a *saccharine matter* for their base, which acquires the nature of an acid, by being combined with *oxygen*.

*Metals* consist of a peculiar metallic base and *lichtstoff*. By their combination with *oxygen*, which they are capable of absorbing in a greater or less proportion, they are changed into calces.

*Fixed alkalis* and *earths* are substances which *cannot be decomposed*.

All combinations of *oxygen* and *lichtstoff* take place, according to a double elective attraction, of which combustion affords an example. While the combustible body attracts the *oxygen* from the pyrogen air, its *lichtstoff* combines with its pyrogen base, and appears in the form of fire. The combustible body itself acquires that proportion of weight, which is equal to the weight of the pyrogen gas that has escaped, and is changed either into water, acid, or metallic calx.

But it is equally possible that, during the saturation, mere light and no sensible heat should be produced. Such is the case with phosphorus, when placed in *lichtsoffluft*. It deprives this luminating air of its *oxygen*, by reason of its greater affinity to the latter, and is changed into acid. Thus, the matter of light contained in both is disengaged, and appears now in the state of uncombined, or free light.

Bodies combined with *oxygen* are deprived of that substance, when they meet, in a higher temperature, with such a *tertium* as manifests a greater elective attraction for *oxygen*, than for matter of light; as for instance, *carbon*. Its elementary base unites itself to the *oxygen* of the water, the acid,

acid, and imparts its *lichtstoff* to the elementary base of these combinations. They now return to their pristine state, but at the same time suffer that diminution of weight, which their oxygen before possessed\*.

The facts on which Professor Goettling endeavours to establish his propositions, are unquestionably of great importance; and it is probable, that his theory, as it does not wound their national pride, will meet with a favourable reception among the German chemists.

Time, the great improver of all discoveries, multiplied and careful researches, and unequivocal facts alone, can decide which of the systems we have now reviewed, is intitled to the greatest share of *probability*: for, in this instance, we cannot arrive at demonstrative *certainly*.—Let it suffice, that we have here exhibited the outlines of those systems. This, it will be readily conceived, has not been done with a view to improve the experienced chemist, but to instruct the physical student.

Dr. Frank concludes this part of the subject, by observing, that he was induced to compose the present treatise, in consequence of the repeated wishes of his own pupils, as well as of a numerous branch of the professors of pharmacy, many of whom are little acquainted with the laws and systems of chemistry; and who all complained of the want of a sufficiently concise and perspicuous view of the different chemical systems.—“Nobody,” says he, “can be more sensible, than I am myself, of its imperfections; but the general nature of the view I meant to give, induced me to confine it in this narrow compass, and rather to incur the blame of being too brief, than too diffuse. A more particular account of the antiphlogistic system would not have enabled the general reader to form such an idea of it, as to understand and compare it with the systems I have yet to delineate.”

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\* “Contributions to the improvement of the Antiphlogistic System of Chemistry:”  
By I. F. GOETTLING, 8vo. Weimar, 1764.

(To be concluded in the next Number.)



HINTS AND IMPROVEMENTS  
IN THE PRACTICE OF  
MEDICINE AND SURGERY.

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*On the febrifuge Virtues of Lime, Magnesia, and alkaline Salts  
in Dysentery, Yellow Fever, and Scarlatina Anginosa.*

**T**ROM a letter of Dr. J. BARKER, dated Portland, (Maine,) America, May 30th, 1798, and inserted at full length in the "*Medical Repository*," Vol. II. No. II. we are happy to communicate to our readers the following important facts:—

" From the middle of August to the first of October, an epidemic fever, attended with dysentery, was very prevalent in several towns. Adults were more frequently seized with it than children.

" The disease was ushered in with pain in the abdomen, frequent stools, nausea or vomiting, chilliness succeeded by heat, and great prostration of strength. The stools were deeply tinged with blood, and very fetid. The matter rejected from the stomach was of a dark green colour; its taste is described to be like that of tartar emetic. A considerable fever and thirst constantly attended. The pulse was quick and weak, though, during the exacerbation, which happened about once in twelve hours, large and full. The violence of the disease continued from one to two weeks, according to the means used for its amelioration. Thirty severe cases, besides several gentle ones, fell to my share. I lost only one adult, to whom I was called at a late period, and two children, where very little medicine could be administered.

" The mode of practice which I pursued, was to cleanse the stomach with ipecacuanha, and the intestines with rheum and sal absinth. or sal. cathar. with sal absinth.—Lubricating oils and mucilages were occasionally employed, as also enemas. But the remedies which I depended on to counteract the noxious cause, were *alkaline salts and earths*. My common prescription was:—aq. calc. one pound, sal absinth. two drachms; the dose from one to two ounces every hour, and in some cases every half hour or oftener, in an infusion of flor. chamœm. Besides this, I used testa. magnes. or creta, frequently, from one to two ounces in twenty-four hours. Calcined oyster-shells were sometimes employed, from two scruples to one drachm the dose.

" This

" This fever generally subsided in ten or twelve days, where alkaline remedies were employed ; but where they were not used, it was frequently protracted to twenty and sometimes thirty or more days, and then the patients seldom recovered."

After having cited several successful cases, Dr. Barker thus proceeds :—  
" The recovery of these patients served more fully to establish the credit of a mode of practice, which had been judged by some to border upon rashness, viz. exhibiting alkaline salts and lime water in fevers\*. During the months of November, December, January, February, and March, the fever which still continued, was attended, in most cases, with a scarlet efflorescence and sore-throat. It prevailed in almost every town in the county, and was mortal in many instances.

" The disease was ushered in with the usual symptoms of nausea or vomiting, chilly fits, succeeded by heat, &c. The throat soon became inflamed, which in a short time put on a gangrenous hue, and the breath was very fetid. In some cases, the throat was swelled to such a degree, both externally and internally, that deglutition and speech were almost entirely prevented ; but there was no uniformity in the symptoms. In some there was no sore-throat or eruption : in three cases which I saw, the virus was turned upon the renal glands, producing bloody urine, mixed with skinny filaments, and attended with great pain, heat, and anguish. In others there was distressing pain in the bowels, and thirst for water,

" After cleansing the stomach and intestines, my efforts were particularly directed to counteract the virus, or noxious cause. To effectuate this important purpose, alkaline remedies were liberally employed, and their good effects were very apparent.

" Besides these, oils and mucilages were used to advantage. The mouth and throat, when particularly affected was gargled with lime-water. This was evidently beneficial. It was as congenial to the ulcers and sores, as it is to ulcerations upon the external surface. Epsipastics were applied to the neck, with a view to unload the glands of accumulated poison. The blisters produced a great discharge, and were very sore, attended in many instances with intolerable itching. A lotion of lime-water readily allayed this itching,

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\* The saline mixture and spt. mind. have ever been considered as safe and efficacious medicines in fevers : but we never suspected their efficacy depended upon any alkaline power that was exerted after saturation, and our ignorance in this respect, we presume is not very singular.

itching, and disposed the sores to heal, which in some cases appeared gangrenous.—I was called to two cases, which terminated fatally. These were all that I lost, out of more than fifty in this distemper.

“ In one of these fatal cases, that of a child, four years of age, who died on the ninth day of the disorder, upon dissection, the inside of the stomach was found red and inflamed; the texture of the villous membrane destroyed, grumous blood appearing in its stead. A black liquor was also contained in the stomach, which was in a contracted state. No marks of inflammation appeared in the intestines; they contained a yellowish fluid, and were distended with air. The omentum was considerably wasted, and of a red colour. No other morbid affection could be discovered.

“ I dissected a woman, some years since, who died of a puerperal fever, and found the stomach in a similar condition with the child inspected. I saw another puerperal subject dissected, where the rectum was also corroded and partly destroyed. I then accused the *bile* of being the mischievous cause; but I now believe that the ravages made in the stomach, intestines, throat, or other parts, must be imputed to the *septic acid*; and I am fully persuaded that a seasonable and liberal use of *alkalines*, in all these different species of fever, are especially indicated. Indeed, I conceive no other medicine that can, with any measurable degree of propriety, be denominated febrifuges.

“ For nearly three years I have pursued this mode of practice in febrile diseases, and have kept exact records of cases; from which it appears, that *I have not lost a single patient*, where these remedies have been particularly employed *from the commencement of the fever*.

“ I found that opium and spirits could be borne only in very small quantities in these fevers, especially in the first stage; and when the morbid excitement was considerable, they were evidently injurious. Wine was offensive to most stomachs; and the bark was by no means congenial. Mild bitters in decoctions were generally agreeable. Rice and Indian gruel were the most grateful articles of diet.”

In concluding this interesting paper, we cannot omit to mention that Dr. Barker promises, “ before long,” to publish a particular account of these febrile distempers, as they have appeared in America, for a few years past, together with such observations as may be productive of public advantage.

*Electricity employed to discover and destroy the Tape-Worm.*

IN our last Number, p. 186, we barely mentioned that Dr. FRICKE of Brunswick, had lately made several successful experiments, not only to discover that unwelcome visitor the *tape-worm*, but likewise to destroy and expel it, by the powerful aid of electricity. The proper application of the electric fluid, according to the account of Dr. F. almost instantaneously relieves the most violent symptoms, such as anguish, oppression, spasmodic stricture in the præcordia, &c. The manner of applying electricity to individuals suspected to be harrassed by the tape-worm, is as follows :

Dr. F. uses a conductor with a globe of two inches and a half in diameter, from which he causes the sparks to strike against a globe of an insulated *scintillometer*: these sparks he passes in different directions through the abdomen; but, at first, admits them only from three to four inches long. As soon, however, as the patient can conveniently bear this kind of vibration, sparks to the length of from ten to twelve inches are admitted: and the more powerful these are, the more speedy will be the relief.

Dr. Fricke's scintillometer consists of a metal cylinder, thirty inches long, which lies insulated upon a pedestal, in a horizontal direction: it is divided into inches, and may be slid backwards and forwards. On one extremity, this cylinder is provided with a brass globe, four inches in diameter, on which the sparks strike from the conductor: the other extremity is provided with a ring. To this ring he fastens a metal chain or wire, covered with silk, which is connected with an insulated director. Another director, likewise insulated, is added, by means of a chain to that part of the machine which performs the friction: and by these two directors, which, for the sake of conveniency, are conjoined like a pair of tongs, the passage of the sparks is constantly regulated, while the patient sits on a common chair.

As the symptoms of the tape-worm usually begin with severe tension and oppression about the region of the stomach, the first sparks are directed through the pit of the stomach, in a straight line towards the vertebræ. After several sparks have been administered, eructations frequently take place; the patient feels much relieved in that particular part, but generally perceives the motion of another part of the worm, in some other place. Thither the sparks are again directed, and the worm is incessantly pursued, until it can be distinctly felt by the patient like a heavy weight.

To a lady who had been much troubled with the tape-worm, Dr. Fricke prescribed half a drachm of powder of jallap, and carefully applied the electricity

electricity in the manner before described, during the operation of this remedy: in consequence of such treatment, the patient discharged a tape-worm upwards of twenty yards long. With respect to the necessary precautions in the use of electricity, in general, we refer the reader to IMHORST'S Remarks upon this subject, an abstract view of which we have given in the first Number of this Journal, pp. 55 and 56.

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*On the Medicinal Properties of the Datura Stramonium.*

IN our first Number, page 84, we gave a cursory account of the extraordinary effects of the *thorn-apple* on the human body, when taken internally; as stated by Dr. DE WITT, physician in the city of Albany, America:—at present, we shall furnish the reader with the substance of the "*medical observations on the virtues and properties of the seeds of the Datura Stramonium,*" as described by another medical practitioner, Dr. ALEXANDER KING, of Suffield, Connecticut.

The seeds of this vegetable are, so far at least as Dr. King has made observations upon it, the only parts useful in the *Materia Medica*; as they contain all the virtues of the plant, refined and prepared by the hand of nature.

These seeds, by expression, yielded a mucilaginous oil, which, when externally applied, is cooling, anodyne, and repellent. The virtues are readily obtained by decoction, in an aqueous menstruum. Half a drachm of the bruised seeds, boiled in four ounces of water, until half the quantity be evaporated, is a suitable portion for an adult in twenty-four hours, to be taken in divided doses.

An extract may be obtained by boiling any quantity of the bruised seeds, in a convenient proportion of water, for the space of four hours; then strain off the liquor by pressure; evaporate it over a gentle fire, without taking off the scum, until it have acquired the thickness of a syrup; then remove the liquor from the fire, and place it in a warm oven, in an earthen glazed vessel, until the aqueous parts be evaporated, and it become of a proper consistence for use. The dose is from half a grain to one grain for an adult.

The operation of this medicine, when taken in small doses, is moderately diuretic, and impregnates the urine pretty sensibly with the smell of the seeds. It is cooling, anodyne, and sedative. It relaxes the tone of the solids, lessens the contractile force of the arterial system, and consequently moderates the violent attrition of the circulating fluids against their containing vessels, lowers

lowers the pulsation of the arteries, and renders the pulse slower, more uniform and equable, when excited by violent stimuli. If taken in large doses, it produces the following symptoms: the first sensible effect is in the sight; there appears a preternatural dilatation of the pupil of the eye; vision is rendered indistinct and confused; objects appear multiplied, diversified, and variously coloured; the patient complains that he cannot see clearly; he cannot discern a small object, such for instance as the point of a pin or needle; he sees in the room objects which do not exist, and complains of a numbness of the head, attended with vertigo. It also affects the organs of speech. He falters in pronunciation; his tongue is rendered paralytic; or when he attempts to put it out, he imitates the motions of a person who tries to do the same in a nervous fever. The whole nervous system is disordered; various parts of the body become paralytic. From the senses it extends its influence to the mental faculties. The imagination is confused and disturbed with fear. Terrifying apprehensions perplex the mind, and impress on the countenance the image of this passion. These symptoms all disappear, without any medical assistance, in the space of twenty-four or forty-eight hours, sooner or later, according to the degree in which they prevailed.

Dr. King then relates two cases of phrenitis, or rather inflammation of the meninges of the brain, in both of which he prescribed the decoction prepared of the seeds of the datura, with uncommon success; and, particularly in the second case, he expresses himself in the following terms: "In this case I had a fair opportunity to observe the action of the medicine, in an early stage of the disease, which was cooling, anodyne, and sedative." He also informs us, that he has used this decoction of the thorn-apple in two other cases of the same disorder, with equal success; and, in one instance, without any advantage; but, in that case, a general torpor or insensibility had taken place, before he saw the patient, who consequently died the next day.

This remedy has been further recommended as a remedy for epileptic fits: in which disorder Dr. King has sometimes prescribed it, but without any apparent success. According to his observation, the chalybeates afford a much more efficacious remedy in that disorder.

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### *Carbon, a new Remedy for habitual Costiveness.*

IN the '*Medical Repository*,' conducted by Drs. MITCHILL and MILLER, we find, that simple carbon or charcoal, deprived of its oxygen by heat, has been administered in the New-York Hospital, in fifteen or twenty cases. In no instance has it failed to purge, and in several the purging and intestinal commotion

commotion excited by it, have been so great, that it became necessary to discontinue it. Combined, however, with carbonat of soda (*sal soda*), and particularly with the addition of lenitive electuary. It has proved one of the gentlest and most efficacious remedies for the removal of habitual costiveness that is yet known. It is further stated, that this combination has probably had other and more salutary effects, in a few cases of scrophula and consumption, in which it has been administered. But further and more accurate observations are necessary to determine this point.

The following formula is that used in the New-York Hospital. Take of lenitive electuary, four ounces; carbonate of soda, two drachms; and carbon, two drachms. Of this mixture, from half an ounce, to one and two ounces, are to be taken, twice, thrice, or oftener in the day, according to circumstances.

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*Hydrargium phosphoratum, a powerful new Remedy in the secondary Stages of Syphilis.*

[Extracted from the 'Journal of Inventions of Gotha,' No. II.]

THE phosphoric acid enters into no combination with mercury in its metallic state. But if the mercury be previously dissolved in nitric acid, and if the phosphoric acid, in a liquid form, be dropped into that solution, a white precipitate is formed, which is a true metallic neutral salt, consisting of a combination of the phosphoric acid and mercury.

Although the phosphat of mercury has long been known as a chemical preparation, yet its practical application has been little, if at all, attempted. BERGMAN, in his physical and chemical tracts, gives the following directions for preparing this active medicine:—Eight ounces of vitriolic acid are carefully and well mixed with four pounds of water, in a capacious glass vessel; to this mixture must be gradually added fourteen ounces of white calcined bones, reduced to powder. The vessel ought then to be placed in a temperature of about 60° for three days, that it may gently digest: during which time it ought to be frequently stirred with a glass rod. Then the whole should be filtered through fine linen, the fluid part saved in a separate vessel, and the residuum washed in distilled water, till it be completely edulcorated. The liquor contains the phosphoric acid, separated from the bones by means of the vitriolic acid, but in a state not entirely free from gypsum. This liquor must be evaporated to dryness, and the residuum dissolved in the smallest possible quantity of luke-warm water, when a considerable portion of gypsum will remain undissolved. After straining off all the liquor, it must  
again

again be diluted with distilled water, and a solution of the purest potass added to it, until it be completely saturated. Thus the small portion of gypsum still held in solution will be decomposed, and some calcareous earth be precipitated, which must be separated by filtration. The liquor then ought to be evaporated to a proper consistence, and exposed in a cool place for crystallization. At first appears a small portion of vitriolated tartar, which originates from the decomposition of the gypsum; but if the liquor be again evaporated, the phosphorated vegetable alkali will be produced in rhomboidal prismatic crystals. These should be again dissolved in distilled water, and afterwards decomposed by a supersaturated solution of mercury, in the nitric acid. The precipitate thus obtained, after having been completely edulcorated, by repeated affusions of warm distilled water, should be slowly dried. By this process, if the directions given be properly attended to, the product will uniformly be the *purest phosphat of mercury*.

This extremely active mercurial preparation, however, unless it be administered with great caution, is very apt to produce nausea, violent vomiting, ptyalism, and other disagreeable symptoms, even when taken in doses not exceeding half a grain.—With a view to avoid such accidents, it has been successfully prescribed in the following formula:—Take of hydrargyrum phosphoratum, four grains; pulv. cort. cinnam. fourteen grains; sacchar. alb. half a drachm; the whole is to be divided into eight equal parts, one of which is to be taken every morning and evening, unless salivation take place, when it ought to be discontinued. Some patients, however, will bear from one to two grains of the phosphat of mercury, without inconvenience.

This remedy has been observed to heal inveterate venereal ulcers in a very short time, nay in the course of a few days, particularly those about the pudenda. In venereal inflammations of the eyes, chancres, rheumatisms, and chronic eruptions, it has proved of eminent service. Upon the whole, if used with the necessary precaution, and in the hands of a judicious practitioner, it is a medicine mild and gentle in its operation. The cases, in which it deserves the preference over other mercurial preparations, are these: in an inveterate stage of syphilis, particularly in persons of torpid, insensible fibres—in cases of exostosis, as well as obstructions in the lymphatic system—in chronic complaints of the skin, &c. &c. It is perhaps unnecessary to add, that those who would rather hunt after specifics, than study the nature of diseases, and the constitutions of their patients, will be as frequently disappointed in the use of this, as in any other of their favourite remedies.

W.



*A Proposal for a new Method of removing and curing Steatomatous Tumours.*

AS the extirpation of steatomatous and other indolent tumors, by an operation with the knife, is frequently attended with difficulty and danger, on account of more or less violent hemorrhages attending such operations, any other practicable method of removing them would be at once acceptable and beneficial to the practice of surgery.

In the '*Gotha Journal of Inventions*,' No. XII. we meet with an account given by Professor WIMMER, of the university of Graetz, in Styria, relative to this subject, which appears to deserve the serious attention of every surgeon. The case related by the Professor is not a little extraordinary. The tumour was situated on the neck of the patient, far exceeding the size of the whole head, and amounting to the almost incredible weight of from sixteen to eighteen pounds. Mr. Wimmer introduced a seton through the middle of this tumour, which, in the course of a few days, produced inflammation and consequent mortification; so that large pieces of the substance of the mass were gradually separated, until the whole was entirely removed, and the patient completely recovered.

We regret that our limits do not admit of stating the particulars of this interesting case, which the author has described pathologically, in a separate pamphlet, in German, to which we refer the curious reader, and which is intitled, "*History and Cure of a remarkable steatomatous Tumour on the Neck: by J. WIMMER, Svo, Grätz, with a plate.*"

In justice, however, to the ingenious author, we shall further remark, that besides the remarkable case before alluded to, he has treated *four* other patients afflicted with steatomatous tumours in a similar manner, and with equal success. Hence he draws the following conclusion, "that in large steatomatous tumours, which obviously contain fat, a mortification of this substance ought not to be considered as an alarming symptom, but rather as the most certain and favourable termination of the complaint; provided the patient possess sufficient strength to undergo the natural process of sphacelous separation, and that his fluids be not in a contaminated state."

Although we are not very sanguine in our expectations, that this practice will prove successful in every case of steatomatous excrescence, or that it would even be advisable to recommend that practice *indiscriminately*, in cases of this nature, yet we consider Mr. WIMMER intitled to some share of credit, for an attempt equally bold and ingenious.—If we were allowed

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to suggest a remark, on this occasion, it would n<sup>rks</sup>.  
practitioners rashly to undertake this operation on  
milar kind.

As the vitriolic ether is, of all the fluid substances, the most volatile agent has been observed to be of  
produce the greatest degree of cold during its use, completely recovered.  
extremely volatile agent has been observed to be of  
reduction of encysted hernia \*, if carefully poured on the lip  
surrounding parts of the rupture, it is not unreasonable when two years old, bit  
a timely local application of the ether might be attended at first, which in  
effects in the removal of steatomatous tumours. With this child all the  
this suggestion may not be misapplied, by inducing their schemes, when  
practitioner to trifle with so formidable a disease; as land. After having pre-  
that no external application will be powerful enough, and mercurial  
tion of a tumour which has gradually arrived at a considerable length directed him to

### Miscellaneous Facts and Remark

MUCH has been said and written within the  
internal use of phosphorus, and its medicinal properties, solution of one scruple  
to waste much room and time on a substance, which is prescribed, of which the  
recommended at it has been forgotten, and placed in his mouth, and  
To satisfy our readers, however, respecting the nature of This solution," says  
powerful remedy, we shall briefly extract the opinion of a stimulant remedy,  
writer, Dr. GeseNIUS, from his excellent "Manhatic vessels, I pro-  
German, 8vo. 1796. "This substance," says he, "  
lately ventured to prescribe; they have praised its success, led for four weeks,  
and again remained silent respecting its further use. disorder; the scir-  
servations of respectable practitioners, it cannot be de- gradually to diminish,  
possesses a peculiar power of exciting and animating The dose of the  
has been asserted, that in doses of two, three, or more times a-day, without  
productive of salutary effects in the most critical cases, ed in the use of the  
nervous apoplexy, gout, and epilepsy. As it cannot be to its natural state  
substance, on account of its burning quality, it has been had completely  
probably with a view to increase its strength, some of  
was preserved, has been added to the solution. In medicine  
cine we may dispense with, as we possess other more scilicet, has enriched  
inclination ever to employ this remedy, notwithstanding the attention of practi-

\* Vide "Dr. Duncan's Annals of Medicine," Vol. II. It has been found to possess a stimulant. We have introduced into several

for those who recommend it; and any person who is still anxious to try the effects of phosphorus, I would advise previously to consider what WEIKARDT, from his own experience, has ingeniously communicated to us, respecting the use of it, in his "*Miscellaneous Medical Writings*," in German, No. IV. p. 105, *et seq.* The best writers on this subject are, "A. VATER, *respond.* Mentz, *Dissertatio de Phosphori medicamenti loco assumpti virtute medicâ.*" *Vitemb.* 1751.—and "T. JOSEPHI *Dissertio de Phosphori usu interno.*" 8vo. *Helmst.* 1789.

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*Nausea* and *vomiting* are frequently distressing symptoms during pregnancy. Any remedy, therefore, calculated to relieve, or at least mitigate, such complaints, must prove highly acceptable both to the general and professional reader. Dr. MARCARD, physician to the Court of Oldenburg, and author of a classical work, "*On the practical use of baths*," published about four years ago, in the German language, advises pregnant women to drink simply the *acidulated mineral waters*, particularly that of *Seltzer*. Dr. M. accompanies this advice with the following remark: "Although it produce only a palliative cure, yet, as the remedy can be as often repeated as there is a necessity for it, and as these symptoms are limited to females in a certain state, the relief thus afforded is of equal benefit as if it performed a radical cure." We shall only add, that a *radical cure*, in this instance, is not within the power of art, as the cause of the complaint cannot, or ought not, to be prematurely removed.

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Professor HUFELAND, of Jena, strongly recommends the use of *narcotic remedies* in *chronic inflammation of the eyes*, especially in children. "It is of the greatest importance," says he, "in his valuable work, '*on infantile diseases*,' "to pay particular attention to the increased and preternatural irritability of the diseased part, in the chronic, and particularly in scrophulous ophthalmia of children; for this irritability alone may, even after the material cause is removed, occasion considerable pain, spasmodic stricture, and inflammation. Nay, the cause itself frequently cannot be removed, until the spasm be relieved by such anti-spasmodic remedies which, in a manner, blunt and reduce the sense of feeling. Even mercurial remedies, when exhibited in such cases, with a view to suppress the cause of the malady, frequently operate as new stimuli, unless they be rendered milder, more congenial to the constitution, and consequently more salutary, by combining them with narcotics,"—The Professor relates a case of violent humoral ophthalmia in a child, whose eyes were so completely closed, that they could not be opened by external force. He directed frequent poultices, consisting of the leaves  
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of hyoscyamus boiled in milk, to be applied to the eyes, and repeated mercurial laxatives to be taken internally. The patient discharged a number of worms, and the inflammation of the eyes entirely subsided. The eyes opened spontaneously, and, excepting a slight dimness, completely recovered.

The same author describes an extraordinary case of cancer on the lip of a scrophulous boy, eleven years of age, who, when two years old, bit his under lip in a fall, so that a small nodule appeared at first, which in process of time degenerated into a *confirmed cancer*. With this child all the quacks and old women of the neighbourhood had tried their schemes, when he was submitted to the medical treatment of Hufeland. After having prescribed the belladonna, rhubarb, camphor, cicuta, antimony, and mercurial preparations, with little or no effect, the professor at length directed him to take fifteen drops of the *volatile spirit of sal ammoniac*, much diluted with water, three times a-day, and to increase the doses with four additional drops every day. At the same time, he ordered him to drink a decoction of the young sprigs of the pine-tree, (turion. pini—an excellent antiscorbutic and antiscrophulous medicine,) together with a tea-cupfull of the freshly expressed juice of carrots, every morning, and to make use of a luke-warm saponated bath, every other day. Besides these, a solution of one scruple of antim. tartar. in four ounces of water, was prescribed, of which the patient, frequently through the day, took a little at a time in his mouth, and moistened with it the affected part of the lip. "This solution," says Mr. H. "externally used, is an active resolvent and stimulant remedy, from the immediate absorption of which, by the lymphatic vessels, I promised myself great benefit."

Scarcely had these remedies been regularly continued for four weeks, when an obviously favourable change took place in the disorder; the scirrhosity became softer and smaller; the scabs began gradually to diminish, and the diseased parts became more even and smooth. The dose of the ammoniacal drops was increased to forty, taken three times a-day, without the least inconvenience; and after having duly persisted in the use of the remedies for *three months*, the cancerous lip was reduced to its natural state and all other callosities about the glands of the neck, had completely disappeared.

Professor THUNBERG, the celebrated Swedish traveller, has enriched the materia medica with a remedy which deserves the attention of practitioners, in a more than ordinary degree, and which has been found to possess pre-eminent virtues as an anodyne, antispasmodic, and stimulant. We allude to the oil of *cajeput*, a substance which, although introduced into several

several modern pharmacopœias, is so little employed in actual practice, that it is scarcely known by name to most medical men, and is still more rarely kept in the shops, even in the metropolis.

According to the observations of Thunberg, who is a man of unquestionable authority, this oil has been successfully prescribed in chronic *inflammations of the eyes*. He directs a few drops of this volatile substance to be poured on a soft white linen cloth, which are allowed first to evaporate, while held pretty close to the eyes, and afterwards the same cloth is to be tied over these organs during the night.

In the *gout*, as well as in *acute rheumatism*, it has proved of immediate service, by anointing the affected part with this ethereal oil, which has a remarkable tendency to open the pores, and dissipate, in the words of the professor, "the arthritic and rheumatic matter."

In violent *head-achs* it has sometimes afforded speedy relief, by rubbing the temples with it, and inhaling it through the nostrils.

In cases of *tooth-ach*, from whatever cause, says Thunberg, the affection may proceed, whether from a carious hollow tooth, or rheumatic acrimony, catarrh, &c. the cajeput oil has generally been efficacious in removing the complaint, if dropped on lint, and placed in the cavity of the tooth, upon the tooth itself, or even at the side of it. Although these accounts may appear somewhat exaggerated, yet, in several cases of odontalgia, and acute rheumatism, we are from experience convinced of its happy effects.

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From a dissertation on the *sick head-ach*, read before the Medical Society of Hartford county, Connecticut, by Dr. NATHANIEL DWIGHT, we extract the following particulars:—After noticing the general silence of medical writers on this subject, and remarking that Dr. Fothergill alone has formally considered it; that the sick head-ach is a disease of uncommon severity, and generally supposed incurable; that therefore a remedy adequate to its radical cure must deserve to be highly valued; and that the efficacy of the one which he shall propose can be verified by many persons, and in particular by Drs. Fish and Cogswell, of Hartford, America; the author gives an accurate pathological description of this malady, which however our limits do not admit to be inserted, so that we must immediately proceed to the practical part of this treatise.

In discoursing of the method of cure, Dr. Dwight maintains, that "*vegetable acids* in a supereminent degree, correct the (*morbid*) acid of the stomach." Mineral acids, he admits, possess a share of this property, but in an inferior degree.

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The next object of inquiry is, what vegetable acid is preferable to all others? and in what form?—In answer to this Dr. Dwight declares, that ample experience has established the superiority of the *malic acid*, or *cyder*, over every other: and he points out a remedy and mode of cure, equally remarkable for simplicity and efficacy. For this purpose, cyder must be well gone through the first fermentative process, and no farther. It ought to be free from all taste of the cask, and all other impurities. A quantity of it, from half a gill to half a pint, should be drank on an empty stomach, in the morning, from five to fifteen minutes before breakfast.

The efficacy of cyder in the cure of the sick head-ach, leads Dr. Dwight to the mention of its success in the cure, or rather prevention of another disease, which he supposes depend on the same cause, the *bilious colic*. That the sick head-ach, and this species of colic, depend on the same cause, differently applied, he infers, 1st, from their affecting persons of the same temperament, the *bilious*; 2d, from their both observing similar periodical returns; 3d, from the circumstance of persons who, in the course of their lives, have been subject to both complaints for years, having uniformly experienced an exemption from one, during the prevalence of the other, alternately; and 4th, from the efficacy of cyder in the cure of colic, as well as head-ach. "The evidence of its efficacy," continues Dr. Dwight, is this: "The cyder has been drunk by persons for months together, with entire relief from the colic, who, before they began with the remedy, were subject to paroxysms of it every few weeks. After several months had expired, the cyder was laid aside, and the colic returned with as great frequency and severity as before. The remedy was resumed, and the colic again disappeared."

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Dr. EDWARD MILLER, of New-York, has lately published an elaborate "*Inquiry concerning cutaneous Perspiration, and the Operation and Uses of sudorific Remedies*," which we find inserted in the Medical Repository, Vol. II. No. I. —As this essay extends to a considerable length, we can at present only extract from it a few passages of a *practical* tendency, which we consider sufficiently interesting to engage the attention of the reader. After having ably commented on the great importance of the function he treats of, as well as the relation which the cutaneous perspiration bears to the critical solution of febrile diseases, Dr. Miller gives the following opinion on this subject, as the result of his enquiry.

"That sudorifics cannot be usefully employed as a general remedy in fevers, is apparent from the fatal course pursued by many of these diseases, notwithstanding the most copious, universal, and continued sweats, sponta-

neously taking place. The memorable sweating sickness, which first appeared in England, toward the close of the fifteenth century, and was one of the most fatal epidemics on medical record, affords ample proof of this position.

“ On the whole it may be concluded, that much of the use of sudorifics has arisen from mistaken doctrines, concerning the nature of perspiration and of fever, particularly from the erroneous opinions, that the matter of perspiration is excrementitious; that its occasional obstruction is noxious; that it ought, as much as possible, to be eliminated from the system; and that it is only carried off, in considerable quantity, when discoverable by sight or touch.

“ It may be also concluded, that sudorific remedies, especially those of the more powerful kind, are, in general, highly unsafe, and calculated to augment the violence of inflammatory and malignant fevers; and, that though they may succeed in some cases of less violence, or by a favourable concurrence of circumstances, yet they are so constantly liable to produce mischief, and exasperate the disease, that the abuse, on the whole, must be pronounced greatly to overbalance the use.”

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Dr. DEWEES, Lecturer of Midwifery in Philadelphia, has in the same periodical work, published some ‘ *Observations on the use of the warm bath, in cases of laborious parturition* ;’ in a letter addressed to Dr. E. H. SMITH, of New-York, lately deceased; from which the following passage we deemed worthy of being extracted;—

“ The warm bath is by no means a new remedy in that species of labour, in which I have thought blood-letting of so much consequence. Few writers on the subject of midwifery have failed to mention it among other means to overcome the rigidity of the soft parts in laborious labours, that does not depend on a malconfirmation of the pelvis. The French accoucheurs, more particularly, make frequent mention of it; yet none of them, that I am acquainted with, have laid any particular stress upon its virtues in these cases, or place any great dependence on its effects. It has been rather recommended as a probable, than as a certain remedy, and stands upon much the same footing as opium—sometimes perhaps succeeding, but much more frequently failing. With me it has ever been of little or no consequence; nor can I obtain a more favourable character of it from the friends I have consulted. The result, then, of my experience, inquiries, and observation, may be reduced to three heads: 1. Its being almost always inconvenient; 2. Its being sometimes intelligible; and, 3. Its always being limited and uncertain in its effects.”

Cit.

Cit. LOUIS VALENTIN, of Montpellier, has communicated to the editors of the "*Medical Repository*," a conclusive answer to the question:—"Whether any, and what, effect is to be attributed to the greater or less quantity of variolous matter introduced into the system by inoculation? &c." The substance of this answer we give in his own words:—

"I never perceived any difference, with respect to the intenseness of the fever, and the number of pustules, when I made many punctures, and introduced the greatest quantity of fresh matter I possibly could. Whether all the limbs, or several parts of them, be inoculated, at the same time, with the thin matter which first appears in the pustules, and has a more certain effect than that which is matured, or whether only one puncture be performed, is a matter of indifference. I never make incisions: the inconvenience and trouble attending them being sufficiently known. I make punctures, and never draw blood.

"I do not think that a milder disease is communicated by diluting the variolous matter, which is not too old; for here is my dilemma: either the matter which is to be inserted has the requisite qualities or not. If it be liquid, just gathered, and immediately inserted—if the subject have all the necessary dispositions for the absorption and unfolding of the disease, one atom of virus only is as powerful as many drops, for the purpose of inoculation. If the dilution of dry and new matter be not in reasonable proportion, or if it be rendered too liquid with water, it may have no effect: likewise when undiluted, it is incapable of being absorbed; when too old, of acting, and producing the desired effect. But, in all cases, should the smallest particle imaginable be absorbed, it will be sufficient to put in motion what we call the disposition to that disease, as much as when a more considerable mass of matter is inserted. This may be easily conceived and illustrated by the following comparison: does not every one know, that one grain of powder set on fire in the pan of a gun, produces the explosion of the whole charge, as well as when the pan is filled with powder? Surely, the explosion in both cases is neither more nor less considerable; therefore, the quantity of inserted matter has no influence in producing the number of pustules."

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We cannot better conclude this department of our Journal, than by giving the reader a concise view of a subject, which has lately excited considerable attention among the medical practitioners of this country. It will be readily conjectured that we allude to the use of the *digitalis* in the cure of consumption.



Dr. N. DRAKE, of Hadleigh, Suffolk, in a letter to Dr. BEDDOES, dated February 21, 1799, inserted at full length in a late publication, intitled, "*Contributions to Medical and Physical Knowledge, collected by Thomas Beddoes, M. D.*" has furnished us with several valuable "*Observations on the use of the Digitalis in Pulmonary Consumption, with two cases in which it proved permanently successful.*" After having prefixed a short medical history of the digitalis, Dr. Drake proceeds to state his views in prescribing this plant, in cases apparently desperate.

As our limits do not admit of long extracts, we shall only observe, at present, that, although we would not implicitly subscribe to the reasonings on which the indications of cure seem to be established, namely, "*that pus, when exposed to atmospheric air, rapidly attracts oxygen; that an acid of a peculiar kind is generated; that hectic fever, the effect of the absorption of aërated matter, is produced; that as an ulcer of the lungs is perpetually exposed to a stream of air, and of course an ichorous poison continually forming by the union of oxygen with secreted matter, an important curative process would seem to arise, from promoting absorption so rapidly from the surface of the diseased parts, that the pus shall be taken up as soon as secreted, and consequently its combination with oxygen prevented:*" yet we cannot but with pleasure and satisfaction congratulate Dr. Drake, and the medical world at large, on the happy, and we fervently wish, permanent success, of this old, almost abandoned remedy, in conquering the most formidable, and hitherto supposed invincible disorder.

The preparation of the digitalis best adapted to that purpose, appeared to be the *saturated tincture*, of which Dr. Drake ordered to be taken at the commencement of its use, in the first case, only fifteen drops, twice a-day; and in the second, twenty: in the former, the dose was gradually increased to one hundred drops; in the latter to ninety-six,—“with safety; and in patients very debilitated, before either sickness or irregularity of the circulation proved; and even then, these symptoms appeared of little moment, as the first was speedily removed, and the second produced no inconvenience. During this period, all the symptoms of irritation and fever, cough, pain, and dyspnoea daily grew better, and at length altogether retired. On the quantity and quality of expectorated matter, the digitalis soon exerted a most remarkable effect, either promoting its absorption, or diminishing its secretion, or perhaps both, in a rapid manner, whilst at the same time it deprived it of its sator.

“What, however, I consider as of most importance in these cases, and to which perhaps we are alone indebted for a cure, is the demonstration of the possibility of *retarding the circulation for weeks together*, by the use of this

this medicine." p. 484. " I may, I think, without hesitation, affirm, that an *early* exhibition of the saturated tincture in consumptions, will, *in general*, prove successful; and even when the disease is far advanced, provided the patient has but strength sufficient left to endure a gradual depression of the circulation, a result equally fortunate may be expected. That this can be done, even in circumstances of debility, to an extent adequate to effect a cure, and without either sickness, languor, or loss of appetite, the cases now appended will satisfactorily attest." p. 487.

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Equally interesting, and perhaps better founded *in theory*, is the account given by Dr. R. FOWLER, in the same 'Collection,' and on the same subject. To justify our assertion, in the latter respect, we shall cite Dr. Fowler's own words:

" As I had," says this intelligent physician, " frequently seen large doses of the digitalis given by others, and had, myself, still more frequently given it in dropsical cases, without ever observing any of those uncontrollable and dangerous effects which are said to deter many from its use, my mind was perfectly at ease as to its probable effects in phthisis, and the more so, as its power of repressing arterial action, and inducing debility, from which we have most to apprehend in dropsy, was the very quality from which, properly directed, I hoped to derive most advantage here.

" My attention was, indeed, first directed to it, as a remedy likely to be useful in phthisis, by its almost uniform effect of rendering the action of the arteries more slow than natural, at the same time that it appears to excite that of the absorbents. It has long been known, that diseased parts of the body may be removed by depriving them of *all* supply of food from the arteries; and it is now known, that where this cannot with safety be attempted to so full an extent, on account of the intimate connection subsisting between the part to be removed, and such as we wish should remain, that the same effect may be produced by diminishing, to a certain degree, the arterial supply of the part, at the same time that we leave the action of the absorbents in full force. This is the purpose so ably affected by Mr. HUNTER's scientific operation for the cure of popliteal aneurism: and I confess that I was not, and that I still am not, without hope, that something analogous to this may be effected by the operation of digitalis on tubercles in the substance of the lungs. But my expectations of success had a better foundation than reasoning *a priori*."

From a review of the different cases stated by Dr. Fowler, we find that *four* of his *out-patients* completely recovered from the use of digitalis, and  
*five*

*free* were in a fair way of recovery, when his account was transmitted to the press. Of the second class, namely, the *in-patients* of Dr. Fowler, together with those he attended in private practice, there are not less than *seven* who obtained permanent relief, and *two* whose cases were of a doubtful issue, and *one* only who "was a very intemperate man, and died a victim to his own imprudence."—The formula prescribed by Dr. Fowler, is the following: Folior. digitalis purpureæ recentium unc. ii. coque ex aq. puræ, lb. i. ad colaturæ unc. vii. ss. et adde tinct. cardamom. unc. ss. Of this decoction Dr. Fowler generally directed his patients to take half an ounce, twice, thrice, and in a few instances four times in twenty-four hours: and although we do not discover among his patients, many such as, according to Dr. Beddoes's Nosology, might be classed under the *lost cases*, yet the success of the *new remedy*\* has, upon the whole, exceeded our most sanguine hopes. It is however to be regretted, that we are not yet in possession of any cases, in which the origin and progress of pulmonary consumption is traced with *pathological accuracy*; the peculiar constitution, habit, and temperament of the individual, are duly discriminated; and all the concurrent and accidental circumstances, such as the weather, air, climate, season, temperature, &c. are distinctly recorded.

In justice to the editor of the volume from which we have derived the information imparted to us by Dr. Drake and Dr. Fowler, we shall likewise present our readers with a few extracts from the 'Addition' made to these '*Contributions*,' by Dr. Beddoes himself, without any comment.

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\* It is impossible to contemplate the *rationale*, or rather the *modus operandi*, of the digitalis, as stated by the ingenious writers on that subject, without some degree of reluctance. They seem to attribute to this plant, in effect, a peculiar specific action; not as a mere emetic, nor as a stimulant, sedative, &c.; for these effects are produced by a great number and variety of other substances equally powerful and less dangerous in their application. Indeed, it ought to be remembered, that the late celebrated Professor STOLL, of Vienna, in his '*Ratio medendi*,' has furnished us with many instances of *incipient phthisis*, and with a few which may not improperly be termed '*lost cases*,' where he almost uniformly prescribed the smallest doses of antim. tartaris, or the sulphur antim. præcipit, so as to produce continued slight nausea, with singular and unequivocal success. As long, therefore, as it remain<sup>d</sup> to be determined, that the digitalis *alone*, and not conjointly with other medicines, has uniformly cured that formidable disorder, pulmonary consumption, in its more advanced stages; and lastly, that this plant produces effects on the human system different from those of *all other emetics*,—we cannot but suspend our opinion respecting its extraordinary virtues. In the mean time, we beg leave to disavow our belief in *any specifics whatever*, being firmly persuaded, that there exists no substance in nature, which can be considered homogeneous, or even analogous, in a physiological sense, to the elementary constituents of the human or animal body.

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"A good many of the cases," says he, "in which I have hitherto tried it in *effective* doses were *last cases*, that is, the patients were in the last stage of consumption. I have not yet been fortunate enough to rescue any patient in such a situation; but in most instances there was a great alleviation of symptoms; in none did life appear to be shortened by the medicine; in some, as far as analogy enables me to judge, it was generally protracted. B. 521.

"What is the cause of the difference between my success, and that of my two able correspondents? From Dr. Fowler's statement, it is clear, that it does not lie altogether in the *period of the disease*. I have suspected that at first, when I used the decoction, I prescribed it too largely; yet when I again refer to Dr. Fowler's reports, I am obliged to reject this supposition. In the patient whose expectoration of mucus was stopped by an attack of severe sickness, (a circumstance which inspired me with hopes of eventual success,) the purulent part of the expectoration was diminished at each of the subsequent sicknesses: and the effect of sea-sickness upon many phthisical patients, forbids me to conclude, that the medicine failed from too great severity of its action. P. 533.

"My patients were all slender, delicate, puny, or feeble. They had all been *delicately educated*, in which respect they must have differed widely from *hospital patients*. Now may I not assume (what in an '*Essay on Consumption*,' I shall immediately endeavour to prove, by a copious induction of facts) that almost all the peculiarities in the mode of life, among the more opulent classes, tend to lessen the *contractile power* of the muscular fibre, and certainly not less than the rest, the contractility of the lymphatic vessels? If so, I believe it will be easily allowed, that they will be less within the power of association of motions, as well as of direct stimuli. I have long *believed it* to be a principle of the animal economy, that in weak habits the ordinary or natural connection between different sets of moving fibres (or the irritative associations,) are also weak. In such cases, the stomach may be affected; the heart may be affected: yet the lymphatics of the lungs, which in less feeble or more irritable habits, are excited into action, shall continue inert. The facts which I have related, concerning the two last patients, prove that the stomach was affected in all degrees consistent with safety to life, by the digitalis; and yet, that no adequate excitement of the absorbents was produced. I do not offer this opinion for acceptance, but merely to be compared with *future facts*. When Dr. Fowler favours us with those comments, he gives reason to expect, perhaps he will help us to a better explanation. Few people are better qualified for illustrating the actions of the animal economy,

"In five cases of imminent or incipient consumption, the use of digitalis has either removed the complaint, or by producing the most decided good effect, affords hope of success. P. 536.

"An immediate emulation must be produced by these reports among medical observers. But I will beg leave to suggest to them, that the determination of the powers of digitalis, is not the only, perhaps after what has been already done, not the greatest, object of pursuit. We may presume, that nothing stands alone in nature. And a substance of similar effect on the stomach and arterial system, may lurk among the articles of the materia medica. It may be detected in some of the bitters, given in greater doses than common. It is impossible here, not to think of chamomile, which, in a certain dose, sickens; and of horehound, which is the general domestic remedy in hæmoptysis and bad coughs. These, and other substances given upon the above plan, may exert virtues similar to those of digitalis. Chemical analysis may furnish light here, on which account I am glad Mr. DAVY has engaged in the analysis of the digitalis. The discovery of an analogous body would add prodigiously to future success in the treatment of consumption." P. 538.

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Dr. LENTIN, of Luneberg, a celebrated German physician, has lately published in the "*Commentaries of the Royal Society of Gottingen*," some remarks on the *caries ossium*, and the cure of that disorder. He considers it to proceed, on the one hand, from the chemical decomposition of the phosphate of lime, produced by the putrefaction of the jelly contained in the bone. In this view, he is of opinion, that the phosphoric acid will be of advantage in this complaint, and his experience seems to confirm that idea. He administers from ten to twenty drops of the acid internally, in a convenient vehicle; externally, one part of the same acid, with seven parts of distilled water. He has remarked, that the peculiar fetid smell of caries, by these means, in a short time disappears, and the cure speedily succeeds. He adds, on the other hand, that patients affected with hæmorrhoidal symptoms, as well as women during menstruation, were rendered somewhat uneasy and irritable by the use of this new remedy.

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## MEDICAL AND PHYSICAL

## I N T E L L I G E N C E,

(Original and Selected).

**DR. E. A. HOLYOKE**, of Salem, Massachusetts, has contrived an easy method of preparing the *sal aëratus*, or the carbonate of potass, the particular process of which, on account of its simplicity and practical advantage, we take this opportunity of laying before our readers.

“ To obtain this salt, in its most perfect form, dissolve as much of the pure vegetable alkali, in boiling rain, or other pure water, as possible; filter the solution through paper, pour it into a jar of stone or earthen ware, cover the vessel in such a manner that the air may have access to it, but so as to exclude all dust or foreign matter. Let it be hung by a cord in a fermenting vat or cistern for a month or two, in which time a great many crystals will be formed: the superfluous liquor may be poured off, and the salt dried in what is called Hippocrates’sleeve. This liquor may be again saturated with more alkali, and a second time exposed to the air in the cistern, without any loss.”

Although this, no doubt, is the most perfect mode of preparation, yet the following is much less troublesome, and perhaps of equal advantage for all medicinal purposes, and has for the most part been employed by Dr. Holyoke, in preference to the former:—

“ Take a large wooden box, bore eight or ten holes, half an inch in diameter, in the side of it, just below the lower edge of the cover, at nearly equal distances all round; bore also as many holes in the circular bottom of the box, close to the edge of it; then take another box of the same kind, but of a smaller diameter by half or three quarters of an inch; place this in the larger box, and to keep it steady, thrust three or four wooden wedges between the two boxes. The design of the outer box is merely to prevent any dust or dirt from getting into the salt, while the holes in it suffer the fixed air to be freely admitted.

“ The two boxes being thus prepared, fill the inner one with the purest salt of tartar, or any pure fixed vegetable alkali: put its cover on the outer box, leaving the inner one uncovered; sling the double box, thus filled, with a cord, and suspend it in a distiller’s vat or cistern, while the wash is fermenting, a little above the liquor, or in an empty cistern, if it has been much used, and still retains the fixed air; let it remain in this situation for six weeks or two months, or longer; let it then be taken out, and the salt, now fully saturated with the acid, be exposed to the sun and air to dry.

“ The salt thus prepared, does neither defloresce or deliquesce in the open air, and for all common purposes is, I believe, equal to that prepared by crystallization;—it is much more tolerable to the palate, and may be taken in larger doses than the mere alkali; and as it is decomposed by vegetable as well as mineral acids, it may be exhibited, instead of the alkali, in perhaps every case where the latter is proper, unless the fixed air is judged improper.

“ I commonly direct about two drachms, or rather more, of this salt, to be dissolved in three ounces of pure water; a large spoonful of this solution, added to the same quantity of good vinegar, or lemon juice, at the instant  
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of swallowing it, makes an agreeable dose. But the taste of this solution is so mild, that if the prescriber chuses, a spoonful of it may be swallowed alone first, and as much vegetable acid immediately upon it, in which case none of the gas will be lost.

"When acidity abounds in the *first passages*, a little of this salt, added to any bitter infusion, or the dry salt, added to powder of columbo, or any peptic powder, is an effectual antacid.

"In *calculous cases* this salt is recommended by writers, particularly by the celebrated Dr. CULLEN, in his '*Materia Medica*,' Vol. II. Ch. 13, as being an happy expedient, for conveying larger quantities of alkali into the stomach, than it can bear in its natural state."

The *Economical Society of Batavia* propose the following important question, and invite the scientific inquirer, of whatever nation, to give a satisfactory answer, viz.—"*Are there any means, hitherto unknown, adequate to the purpose of purifying corrupted water so completely, as to remove its taste and smell, without the admixture of any unhealthy or noxious ingredient, and rendering it a clear, refreshing, and wholesome beverage; and what are the particular means?*" Six thousand florins, or about five hundred guineas, are offered as a reward for a conclusive answer.

The following are the conditions which ought to be attended to by competitors for this handsome prize: 1. the process must not be expensive or troublesome, nor should it be attended with a great consumption of fuel, so that it may be employed at sea, in ships deeply laden, and exposed to violent motion; 2. it must be such as can be easily executed by seamen; 3. when conducted in different climates, it must always give the same result; 4. it ought to produce no pernicious effects, either by corrosion or otherwise, on the coppers in which the mariners prepare their food.

One third of the prize will be due to the inventor, when, by communicating his secret to the Committee of the Society, he shall have enabled them to make repeated experiments, on board of such vessels as they shall think proper; and the remaining two thirds, after they have made these experiments, on board of several vessels, in different climates, and shall be convinced by satisfactory accounts, that the means proposed have proved effectual. The memoirs on this subject are to be directed to J. J. DESSOUT, secretary-general to the Batavian Economical Society, at Haarlem, previous to the 28th of February, 1800.

In the '*Recueil periodique de la Societ  de Medicine de Paris*,' No. XXX. we meet with an interesting memoir, by Cit. GOLDSCHMID, *On the utility of factitious mineral waters, and the preference they deserve to that of the natural springs*. The author submits to the society, the examination of the artificial waters manufactured by him, in imitation of those prepared by the hand of nature, in the mineral springs of Seltz, Spa, and Sedlitz. The grounds on which he maintains the superiority of his artificial compounds, over the natural productions, are as follow: 1st. The season has a remarkable influence on the natural spring-waters, which in rainy seasons lose a considerable share of their virtues: 2d. It is proved by chemical analysis, that a part of their gas and other constituent parts escape in transporting and keeping them for some length of time; and 3d. They can only hold in solution such a quantity of metallic ingredients, as is proportionate to the gas and acids capable of dissolving them.

On the other hand, Cit. Goldschmid boldly asserts, that the mineral waters of his manufacture are more efficacious, and less expensive; as they

not only contain a greater portion of gas, but can also be composed of whatever quantity and quality of salt, or earth, may be judged necessary: and, as they may be prepared at the time they are wanted, they will lose no part of their virtues. Lastly, they are incomparably more economical and convenient to the purchaser, inasmuch as they are stronger, and consequently do not require to be used in such large and nauseating doses as the natural waters; a circumstance which, together with their reduced price, renders them an object worthy the attention of the consumer. In a future Number, we shall present our readers with a more detailed account of these factitious waters.

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The following method of *preserving apples from frost*, which is used in North America, as well as in some parts of Germany, we extract from the first Number of Dr. ANDERSON'S '*Recreations in Agriculture, &c. &c.*' a periodical work which we have no doubt will be found uncommonly useful to the farmer, the naturalist, and to readers in general. The apples are kept in a small apartment appropriated for that purpose, on the highest floor in the house, immediately beneath the roof, in which no fire is ever lighted, and which is therefore more exposed to the cold than any part of the building: yet it is found, by invariable experience, that if a thin linen cloth be thrown over the apples, before the frost commences, the fruit under it is never injured, however intense the frost may have been. Linen only is used for that purpose, as a covering of woollen cloth has been found ineffectual.

Dr. Anderson also communicates to us, from the Memoirs of the Royal Society of Agriculture in Paris, the following discovery for *preventing the blossoms of fruit trees being damaged by early Spring frosts*. If a rope, (a hempen one he presumes,) be intermixed among the branches of a fruit tree in blossom, and the end of it brought down so as to terminate in a bucket of water; and should a slight frost take place during the night, in that case the tree will not be affected by the frost; but a film of ice of considerable thickness, will be formed on the surface of the bucket, in which the rope's end is immersed; although it often happened that another bucket of water, placed beside it for the sake of experiment, had no ice at all upon it.

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The following singular and ingenious method of multiplying the *Fritillaria Regia, Lin.* is described in the second volume of the *Collection of Memoirs and Observations on Botanical and Economical Subjects*, by the late Professor HEDWIE, of Leipzig. When this plant is in full blossom, the flowers, leaves, and upper part of the root must be cut and wrapped in several folds of writing paper, so that it be entirely covered; it is then to be moderately pressed between two boards, and in the course of a few months there will be seen several small roots germinating at the lower extremity of this apparently decayed vegetable body.

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Another volume of the *Transactions of the Natural History Society*, at Copenhagen, has been lately submitted to the public. It contains a description of several new objects belonging to the department of Natural History, together with their representations in engravings. Although the work itself is written and printed in the Danish language, the characters and descriptions of the plants are uniformly given in Latin. The whole collection now consists of four volumes.



Professor KNACKSTAEDT, of Petersburg, who is favourably known to the medical reader, by several useful publications, has lately written an account of the medicinal properties of the *Enula Helenium*, inserted in the last volume of the *Memoirs of the Institute of Petersburg*, and in which he maintains that this plant given internally, and at the same time applied externally, has proved a remedy of great efficacy in curing the *tinca*, *itch*, and other cutaneous diseases.

Dr. MITCHELL, of New York, in concluding his letter to Dr. Haworth, of Oxford, on the subject of Medical Geography, some interesting parts of which we have communicated to our readers, p. 254 & seq. of this Number, makes the following curious remarks, concerning the chemico-physical tracts of *old Mayow*.

"That this man (says Dr. Mitchell,) who was a London physician, and a fellow of All-souls college, his brilliant discoveries, and his book which contains an account of them, should all be forgotten, in his own country as well as abroad, within less than one hundred years, so effectually that *Franklin* could never have read his explanation of water spouts, nor *Scheele* his detection of dephlogisticated air, nor *Girtanner* his manner of accounting for muscular action, nor any body else, what he has left on respiration, and on the condition of the unborn fœtus, and unhatched chick—are among the most singular occurrences in the literary history of the eighteenth century."

Cit. MORICHEAU BEAUCHAMP has lately presented the medical reader with a memoir communicated to the Medical Society of Paris, and inserted in their 'Recueil Periodique,' No. xxviii. It is an account of a *particular affection of the heart*, seen in the dead body of a man, whose disorder was a complicated nasal hæmorrhage, which announced nothing extraordinary in the region of the heart. On opening the body, however, there was found a considerable quantity of blood coagulated in the stomach and the intestines; and the heart was much larger than in that of a person in a state of health. At the posterior and lateral part of the left ventricle was observed a round protuberance supported by a very large pedicle, not unlike the head of a thigh-bone attached to its neck, but of a size about a third part bigger. The heart was of a lively red colour; the pedicle somewhat darker. The pericardium covered the whole, and closely adhered to it, particularly to the convex part, which offered considerable resistance to the touch, and was of a cartilaginous hardness. On making a transverse incision, with some difficulty, a sound was perceived resembling that produced by cutting a cartilage: it exhibited a cavity of the bigness of a common nut, which penetrated the left ventricle, under the mitral valves. The interior part of this tumour presented two kinds of substances: the outermost was greyish; the other appeared not unlike the parenchyma of the heart; being soft in some parts, while in the middle of the opening could be distinguished a bony circle, large enough to admit the fore-finger. Most of the valves of the heart were ossified.

Two eminent German booksellers, have lately advertised, for sale, that magnificent edition of "*Albina Tabulæ Anatomicae Sceleti & Musculorum: cum Tab. Aen. Sceleti, xxxiv. & Musculorum xxvi. Lugduni Batav. 1747.*" in two volumes, large folio. They offer this work at different prices; viz. *eight and nine Carolins*, or from eight to nine pounds British currency: the former reduced price is proposed by Mr. *Kœl*, of Würzburg, who in the  
Jena

Jena Gazette, solicits orders for this classical work. Our readers will perhaps recollect, that Professor *Siemmering*, of Mayence, who now resides at Frankfort, has lately published one of the most perfect engravings of a *female skeleton*, purposely designed as a counter-part to Albinus's male skeleton, which wanted the female; and, by the addition of which, that collection is now rendered one of the most splendid and complete anatomical works we possess.

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There is at present in the French press, an extensive work on *comparative anatomy*, from the able pen of Cit. *Cuvier*, whose talents for observation, and accuracy in description, leave no doubt that we shall be presented with a performance of superior excellence.

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Professor GÖTTLING, of Jena, endeavoured to procure an atmospheric air in the driest possible state, by means of caustic alkali. He introduced into this air, under mercury, some crystals of the most concentrated, fuming sulphuric acid, which he had obtained from Saxon vitriol. There were no longer any fumes perceptible in this exsiccated air; hence, as Mr. G. observes, it is probable, that this imperfect vitriolic acid, decomposes the water of the atmosphere, and thus becomes perfect sulphuric acid.

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Dr. SCHERER, the chemist of Jena, now of Gotha, has ascertained by repeated experiments, that *Canton's Phosphorus* is not in the least luminous, if it be exposed to the light of the moon.

This Gentleman has also communicated to Professor Tromsdorf, the ingenious remark made by the Privy Counsellor, VON GOETHE, that putrid wood is luminous only when for some time exposed to the influence of the atmosphere. See *Tromsdorf's Journal of Pharmacy*, Vol. III. No. II.

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By the late experiments of Dr. JAEGER \*, as well as those by the Aulic Counsellor HILDEBRAND †, (who prepared azotic gas with much trouble, by the deflagration of nitre,) and the additional confirmation of Cit. *Van Mons* ‡, it is now certain that *phosphorus is not luminous* in the *purest azotic gas*, as was formerly maintained by Professor Gœtting. This phenomenon took place only when a small quantity of oxygen was present in the azote, and continued only during the consumption of the oxygen.

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Mr. MARUM, the Dutch chemist, has made some very interesting experiments, on the *temperature of the electric fluid*, and found that a thermometer, placed before the conductor of Tayler's famous machine, rose in a rarefied atmosphere, from 45° to 151½°. He also succeeded in converting several solid bodies, by means of electricity, into elastic fluids.

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Dr. SCHERER considers it very probable, that the *carbon*, produced in the well-known experiments of Dr. Pearson, and repeated by him with equal success, might have been separated from *phosphorus*, which Dr. Girtanner supposes

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\* *Gren's Physical Journal*; Vol. II. No. IV. † *Crell's Annals of Chemistry*, for 1796; Vol. I. p. 255. ‡ *Gren's Journal*; Vol. III. No. III.

supposes to be a compound body, and which in a process of combustion, in the oxygenated muriatic acid acquires, according to Dr. Scherer, a perfectly black colour.

When Professor HELLE, placed smoking phosphorus in pure nitrous gas, obtained from copper filings dissolved in the nitric acid, he observed that although the *phosphorus* emitted no vapours, yet it appeared to have undergone *some change*, as a yellow fluid substance was at the same time produced. On adding a small quantity of oxygen, the usual red fumes of the nitric acid were generated, but soon after this a grey-coloured column of vapour descended to the bottom; the consequence of which was, a universal change of colour in the solution, which presented a highly interesting spectacle. See *Gren's Physical Journal*; Vol. III. p. 93.

The *sulphuric acid* has been successfully *desoxygenated*, in the humid way, by means of the sulphuret of potass. Cit. *Van Mons* made this conclusive experiment, and observed that a solution of this salt, after standing for a considerable time on pulverized charcoal, had been changed into a sulphat of potass, (*hepar sulphuris*), and disengaged sulphurated hydrogen gas. Here, therefore, the carbon had attracted the acid of the oxygen, and imparted its base, the sulphur, to the alkali. *Ibid.* p. 230.

The same ingenious chemist succeeded in accomplishing a true *combination of the oxygenated muriatic acid* with the ammoniac, without any decomposition of the combining substances having taken place in the experiment. This salt is possessed of the surprising property of detonating in a requisite degree of heat, as well as in the open air, and in all fluids which do not decompose it.

Professor KLAPROTH discovered the *vegetable alkali* to be likewise a constituent part of *mineral substances*. In the decomposition of the fossil, called *leucit*, he found from twenty to twenty-two parts of potass in the hundred. The Professor promises to furnish us with the analysis of this substance, in the second volume of his work, entitled, "*Contributions to Physical Knowledge*," in German.

Professor ABILGAART, in a similar manner, found the *potass* completely formed as a constituent part of *animal blood*. For, on treating the blood of horses with the nitric acid, without the aid of fire, he obtained true nitre, by crystallization.

In order to procure the *potass* *chemically pure*, and free from the sulphuric and nitric acids, Professor WURZER points out the following process: Let the alkali, separated from tartar by means of combustion, be saturated in distilled vinegar, and the solution afterwards be diluted with distilled water. This clarified solution ought then to be combined, first with the acetate of barytes, and next with the acetate of silver gradually dropped into it, as long as any precipitation takes place. After this the fluid part is to be filtered, and the solid part completely dried by evaporating the humidity; the dry salt is now to be calcined in a silver crucible, till all the vinegar be dissipated. Thus the residuum exhibits a perfectly pure vegetable alkali, which

which requires to be dissolved and clarified only in distilled water, to render it fit for all chemical purposes.

According to an account inserted in the third volume, fourth number of the late Professor *Gren's 'Annals of Physic,'* Mr. FABRONI, of Florence, is said to have proved, that alkohol is not essentially necessary to the formation of ether, and that he has prepared a perfect ether without the aid of vinous spirit. On the strength of this fact, Mr. Fabroni proposes to establish a new theory of the formation of ether, which, together with a detailed description of the process, the author has pledged himself to lay before the public

*La Metherie* in his 'Observations,' tom. xliii. p. 464, as well as *Gren* in his *Physical Journal*, vol. iii. p. 45. have severally observed that the mineral or fossil alkali is completely formed in the *Salsola Soda Linn.*; a circumstance by which this plant is sufficiently distinguished from all others, while it contains not the least particle of either potass or calcareous earth.

According to a statement of facts contained in *Tromsdorf's 'Journal of Pharmacy,'* vol. iii. p. 45, Mr. COFFENS has decomposed sea-salt, by mixing one part of it with four parts of lime, and two parts of sand; making cakes of this mixture, and then allowing the mineral alkali to crystallize spontaneously on the surface of these cakes.

Citizen GUYTON MORVEAU has observed, that the carbonate of barytes dissolved in water impregnated with carbonic acid gas, is the most effectual test, or re-agent, for discovering the presence of the sulphuric acid. It is further asserted, that the muriated mineral alkali is likewise readily decomposed by the application of that test.

In decomposing sal ammoniac, by means of potass, Cit. VAN MONS obtained a salt in crystals of a regular rhomboidal figure and a considerable size. According to the chemical experiments made with it, this is a triple salt, consisting of the muriatic acid which has formed a double neutral compound, partly with the vegetable alkaline salt, and partly with the ammoniac. Hence it may be understood how it happens, that by means of the vegetable alkali, a very small proportion of ammoniac only can be separated from the ammoniacal salt.

Chemists in general, have hitherto paid little attention to the *multiplied combinations of salts.* This subject has lately received some illustration from the experiments of Professor LINK: he discovered ammoniacal, magnesian, and sulphurated potass and soda; ferruginous and sulphurated potass; ferruginous sulphates of copper and nickel; sulphates of zink, and ammoniacal sulphate of nickel combined with cobalt.

On distilling sixteen ounces of the sulphat of silex, which had been previously well washed and beat, with four ounces of powdered carbon, in a Waldenburg retort over a strong fire, Professor LAMPADIUS obtained only a small portion of sulphur, but two ounces and a half of a fluid, the smell of which resembled hepatic gas, which was highly inflammable, of a greater specific gravity than water, and besides preserved its fluid state under water, in a temperature of 10° of de Luc, or 0 of Fahrenheit. This fluid, after being exposed for some minutes to the fresh air, was changed into a true sulphur.

Mr.

Mr. Lampadius on this occasion, proposes the question: "Is sulphur in a perfectly desoxydated state always a fluid? or was it here dissolved in the hydrogen which became dissengaged from the latent portion (*Rückhalt*—remainder) of water in the carbon?"

Dr. RICHTER, the Prussian Chemist has lately published two valuable chemical processes, viz. the preparations of the *crystallized acid of lemons*, from the juice of either fresh or putrid lemons, currants, &c. and the *citrate of iron*; but as the room allotted to this department of our Journal is already preoccupied, we are, for the present, obliged to defer the particulars of these preparations, as well as many other *new, or improved pharmaceutical processes*, which have been lately devised by the ablest chemists in this and other countries.

In the 86th Number of the "*Annals de Chemie*," we find a very ingenious but rather diffuse, memoir of VON HUMBOLDT, "*on the absorption of oxygen by simple earths, and its influence on the cultivation of the soil*;" a subject so highly interesting, that we hope to gratify our readers with an elaborate abstract from this memoir, early in a future Number of this Journal.

Citizen BAUDELOCQUE read on the 15th of February last, in the Medical Society of Paris, a memoir, communicated to him by Citizen TARBES, officer of health at Toulouse, relative to the Cæsarian Section, and containing inquiries and reflections on several cases in which that operation had been performed. If our limits should admit of it, we propose to give likewise the substance of this instructive paper in a future Number of our Journal.

In the Grand Hospice d'Humanité, the operations for *lithotomy* are now invariably performed with the *lithotomy caché* of Friar Cosme. A late German traveller, Dr. Ayerer, who has visited all Italy, in which country that operation is practised according to the principles of Hawkins and Cheselden, bestows uncommon praise upon this method of practice of the English surgeons. Professor Loder, of Jena, in the first Number of his '*Chirurgical Journal*' gives the preference to the instrument used by Hawkins, and next to it he employs those used by *Le Cat*.

Dr. BRADLEY proposes to deliver a summer course of lectures on the *Theory and practice of Medicine*, for the accommodation of such gentlemen as may be prevented, by professional engagements, from attending lectures during the winter.

The first lecture will be delivered on Monday, the 13th of May, at the Lecture-room, No. 21, Great Eastcheap, near the Monument, at six o'clock in the afternoon.—Terms three guineas.

As a circumstance of medical news, we have to notice the retirement of Dr. MATTHEW BAILLIE, as a teacher of anatomy.

To this gentleman, who was his nephew, Dr. William Hunter bequeathed the use of his Museum, for a term of years; and, in consequence of arrangements made soon after Dr. Hunter's death, the anatomical lectures were carried on, since that time, jointly by Dr. Baillie and Mr. Cruikshank, in the Theatre built by Dr. Hunter, in Great Windmill-street. Dr. Baillie  
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soon established a high reputation as a teacher, for which he was admirably calculated, by having a natural clearness of mind, much improved by habits of arrangement. If he did not equal the talents of his uncle, as an accomplished orator, he possessed all that perspicuity of description, and clearness in demonstration, which are so essential for instructing others. His own view of a subject was always distinct, and he had a happy facility of rendering it so to others. By these talents he supported the reputation of the school, and gained the esteem of his pupils, who have, we understand, conveyed their sentiments of his worth, by presenting him with a handsome piece of plate.

His last lecture, on Thursday, April 11th, consisted of a demonstration of the absorbent system; at the conclusion of which he read a short but neat address to the following effect:

GENTLEMEN,

"I have now finished the part which belonged to me of this course of lectures,—the last which I propose to give. For some time past, my time has been so much occupied by the ordinary duties of my profession, that I have often found it difficult to give the lectures. But I have farther been induced to sacrifice the gratification arising from filling the honourable situation of a public teacher, at this time, from some private circumstances of feeling, which however I cannot very well explain in this place.

"In the course of fifteen years that I have taught anatomy, I have endeavoured faithfully to discharge the duty which I owed to the public, and have much to thank them for the liberal indulgence which I have received; having always found you, Gentlemen, more disposed to overlook my failings, than studious to search them out.

"Lectures on anatomy will continue to be given here by Mr. Cruikshank, my late partner, whose character as a teacher is well known,—and Mr. Wilson, who has for many years superintended the dissecting-room, and has given the best promise of his abilities as a teacher."

Dr. Baillie delivered this address under evident embarrassment, arising from the feeling that it was the last time of his appearing in that situation; a circumstance which, however trifling, is so connected with mortality, that few men can be wholly indifferent to it. He retired amidst the plaudits of his audience. The theatre on this occasion was completely crowded; and he must have felt flattered, by his last lecture being attended by not only students, but by many teachers in the different departments of medicine and surgery, and by surgeons of the first eminence.

Dr. WILLIAM TURTON, author of the Medical Glossary, is about to put in the press a translation of the "*Systema Naturæ*," of Linné, from the last edition, by Gmelin. It will be comprised in four large octavo volumes, and will include the later discoveries of societies and naturalists. The English natural productions will be distinguished by an asterisk. Each department will be accompanied with an appropriate introduction, descriptive plates, and an explanation of the Linnéan terms. The first volume, containing the Mammalia, Aves, Amphibia, and Pisces, will be ready for publication some time in the ensuing Autumn.

The great price of Gmelin's edition, and the total exclusion of those, not well acquainted with the Latin language, from consulting the works of the founder of that system, will make this publication an acceptable present to the lovers of natural history, and an useful addition to the stock of English scientific literature.

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The day after the first page of this Number was sent to the press, we received a copy of Dr. JENNER's second work, intitled "*Further observations on the variolæ vaccinæ, or cow-pox.*" 4to. 64 pp. (price 2s. 6d) London. Law.

These observations contain additional evidence in favour of Dr. Jenner's original opinion, and some useful cautions respecting the manner of conducting experiments on this disease, of which we shall give an account in our next.

The following is a correct receipt of Mr. FORSYTH's composition for destroying the *new insect on apple-trees*, and of which we again take notice; as in the account given of it in our last Number, p. 201, the necessary ingredient, lime, was accidentally omitted.

*Rf.* To one hundred gallons of *human urine*, and one bushel of lime, add cow-dung to bring it to the consistence of paint.—If the white efflorescence-like substance, in which the insects are lodged, has made its appearance, it should be previously brushed off.

Cit. DE CANDOLE, of Bourdeaux, has, in a late Number of the 'Bulletin of the Philomatic Society,' published a description of the *Senneberia pinnatifida* (*Lepidium didymum*, Linn.). In explanation of this *noted* description, Cit. Tournon, of Paris, in the 'Magasin Encyclopedique' of the 1st Germinal (March 21st), observes that from Candole's statement it would appear to be an exotic plant, but that he had found it, three years ago, behind the mill belonging to the Carthusians of Bourdeaux, near the Medoc road, in a moist soil: he further adds, that neither Linnæus, nor Murray, mention its native soil.

The French National Institute have appointed Citizen OLIVIER to the dignity of a member of the Republican School in the branch of Zoology, in the class of Physical and Mathematical Sciences. The other, less fortunate, competitors were Cit. Barthez and Juvine.

Among the branches of science proposed to be made the subject of public lectures under the projected *institution for diffusing the knowledge, and facilitating the general introduction of useful mechanical inventions; and for teaching, by courses of philosophical lectures and experiments, the application of science to the common purposes of life*, are the following:

Of heat, and its application to the various purposes of life; of the combustion of inflammable bodies, and the relative quantities of heat producible by the different substances used as fuel; of the principles of the warmth of clothing: of the effects of heat and cold, and of hot and cold winds, on the human body, in sickness and in health; of the effects of breathing vitiated and confined air; of means to render dwelling-houses comfortable and salubrious; of the methods of procuring and preserving ice in summer, and of the best principles of constructing ice-houses; of the means of preserving food in different seasons and climates; of the means of cooling liquors, without the assistance of ice; of vegetation, and of the specific nature of those effects that are produced by manures; of the art of composing manures, and adapting them to the different kinds of soil; of the nature of those changes that are produced on substances used as food in the various processes of cookery: of the nature of those changes which take place in the digestion of food; of the chemical principles of the process of tanning leather, and of the objects that must particularly be had in view, in attempts to improve that most useful art; of the chemical principles of the art of making soap; of the art of bleaching; of the art of dyeing; and, in general, of all mechanical arts, as they apply to the various branches of manufacture.

CRITICAL

CRITICAL RETROSPECT  
OF  
**MEDICAL AND PHYSICAL LITERATURE.**  
[FOREIGN AND DOMESTIC].

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NATURAL HISTORY AND CHEMISTRY.

*Catalogue raisonné des ouvrages, &c.*—A critical catalogue of the works which have been published on mineral waters in general, and particularly those of France, &c. By CARRERE, 4to. 400 pp. (10 livres) Paris. Remont.

This valuable *monographical* book is divided into four distinct parts; in the first we find a list of works on mineral waters in general, containing the titles together with an analysis of *two hundred and fifty-two* publications on that subject;—the second relates to the mineral waters of France in particular, and presents an analytical view of *nine hundred and two* works, with an account of *six hundred and twenty-seven* springs;—the third gives a succinct list of the minerals springs of France, not before described, and which amount to the almost incredible number of four hundred and forty-seven;—lastly, the fourth section of the book contains tables, stating the temperature of the hot springs of France, compared with that of the atmosphere.

The present is a new edition of a work, which has formerly been received with great approbation by medical men, as well as general readers; it was originally published under the patronage of the *ci-devant* Royal Society of Medicine, in consequence of a favourable report made of it, by the late celebrated Vic. d'Azyr.

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ANATOMY AND PHYSIOLOGY.

*Petri Camperi, summi medici, Dissertationes decem, quibus ab illustribus Europæ, præcipue Galliæ academiis palma adjudicata. Accedunt ejusdem de optimâ agendi vel expectandi in medicini ratione liber singularis et dissertatio de forcipum indole et actione. Cum tabulis in ære expressis. Vol. I. 1798. 8vo. pp. xiv. and 562. Lingen. Julicher.*

The editor of this respectable collection is Mr. J. F. M. HERBELL, who is already known as a judicious and accurate compiler, by the edition he has published of the smaller tracts of the celebrated CAMPER, an author, whose great merit in medical science, but particularly in surgery, anatomy, and physiology, are so universally acknowledged, that it is unnecessary to enlarge upon them. We shall, therefore, content ourselves with particularizing the subject of each treatise contained in the first volume: 1. *De Infantum regimine*, written in 1762, and printed in *Tom. vi. Actæ Societatis Doctrinæ. Hollandicæ.*—II. *De emolumentis et optima methodo insitionis variolarum*; written in 1772, and first published at Groningen in 1778, with two engravings, exhibiting the gradual changes of the pustules after the inoculation of the small-pox; a treatise which, at the present time, is peculiarly valuable.—III. *De incommodis ab unguentorum abusu oriundis, et de eorum emendationibus in ulcerum curatione*; written in 1773, and printed in the fourth volume of the "*Memoires de l'Académie Royale de Chirurgie de Paris*," in 1779.—IV. *De theoria et curatione morborum chronicorum pulmonum*, written in 1775, and never before printed. This treatise abounds in useful remarks and observations, relative to the morbid appearances noticed after

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dissection.—v. *Sur les Influences, &c. i. e.* "On the influence which the air, by its different qualities, might display in chirurgical maladies; and on the means of treating them with success;" written in 1775, and now first printed.—In this essay, the learned author endeavours to prove, that the constitution of the atmosphere has no immediate influence on wounds and ulcers; that a great degree of heat or cold, alone, more sensibly affect them; and that it is only from the general state or predisposition of the body, that a wound will suffer unfavourable changes through the inspiration of bad or corrupted air. VII. *De vera et præcipua causa morborum, inter pecora et armenta epidemice, seu epizootice, grassantium;* written in 1777.

*Die trocknen Knochen, &c.*—"A Description of the bones of the human body, in a dry state; for the use of his pupils, and those who practise Anatomy at the Anatomical Theatre of Berlin: By Dr. J. G. WALTER, &c. fourth Edition, improved. 8vo. 412 pp. with plates. Berlin. Lange.

It must be ascribed, in a great measure, to the number of students who frequent this institution at Berlin, and particularly all the natives who propose to establish themselves in the Prussian dominions, that this book has survived a fourth edition. Although the descriptions are, upon the whole, tolerably accurate, yet the style of the author is uncommonly fatiguing, and his language frequently incorrect.

*Traité de Miologie, &c.*—"A Treatise on Myology, according to the Method of Desault;" By HYACINTHE GAVARD, his pupil. 8vo. 398 pp. 1798. (4 livres) Paris. Méquignon, sen. and the author.

This valuable treatise professedly owes its origin to the lectures of the late celebrated Desault, which M. Gavard diligently attended and carefully transcribed.—The red or reddish colour, however, should not have entered into the definition of a muscle (pag. 1); for, in the human body, this is by no means a necessary property of the muscular fibre; and p. 17, the author again contradicts himself, when he says, that the red colour is not essentially present in the fibres of a muscle. He distinguishes with more propriety, between *simple* and *compound* muscles: in the former, the fibres lie only in one direction; while, in the latter, they intersect each other, and are variously interwoven one with another. With respect to the tendons, page 23, we agree with him, that in the dead body they are more pliable than the muscular fibres; but that the reverse is the case in the living subject. Among the properties inherent in muscles, the author reckons elasticity, contractility—which he calls the '*dead power*,'—sensibility, and irritability. The muscular fibre may indeed be extended, but does not again contract with equal force; the contrary is observable in the tendinous fibre.—The muscles possess but a small degree of sensibility. Harweg adduces an instance of necrosis, where the heart was laid bare: upon touching it, its motions became more violent, but the patient felt no pain. In treating of muscular irritability, the author observes, that the heart of a viper, after having separated from it all the viscera for six hours, still manifested the power of contraction. In dissecting various living animals, he never observed a change of colour during the contraction of a muscle.

In describing the individual muscles, at considerable length, the author has followed that method by which they can be displayed to the greatest advantage, in anatomical preparations. Each muscle he first considers according to its superior and inferior surface, and according to its sides, then he describes the tendon, and lastly, points out the effects of both.

Want of room does not permit us to state the peculiarities and deviations of

of the author from other anatomists : we shall therefore only add, that in general he coincides in opinion with the celebrated *Sömmering*, and that this work, as may be expected from an ingenious pupil of Desault, is replete with sound and original remarks, on account of which it may justly be ranked among the classical books on the subject.

*Description anatomique d'une tête humaine extraordinaire, &c.*—*An anatomical Description of an extraordinary human Skull; with an Essay on the origin of the Nerves:* By J. F. N. JADELOT, 8vo. with two plates. (1 livre.) Paris.

The object of this description, a human skull of an uncommon size, was found in the village of Sacy, near Rheims, about five feet from the surface of the ground, and is now preserved in the valuable collection of Cit. Jussieu. The author gives an account of its weight, dimensions, and figure, compared with those of the ordinary head of adults; and likewise furnishes us with a chemical analysis of its substance, compared with that of other human bones. In his opinion, this singular skull affords proof of a disease, before unknown, originating from a softness of the bone (*molities ossis*), accompanied with an enormous, but apparently systematic and regular swelling. He further conjectures, that the phosphate of lime must have influenced the effect of the disease, so as to check its progress, while the carbonate of lime could not have increased till after the death of the subject,

#### PHARMACY AND MATERIA MEDICA.

*Dictionario elemental de Farmacia, &c.*—“*An Elementary Dictionary of Pharmacy; or the Application of the Principles of modern Chemistry to the chief operations of Pharmacy; with an extensive new Nomenclature, and a complete Table of Contents:* By DON MANUEL HERNANDES DE GREGORIO, Apothecary to the King. 2 volumes, small 4to. 300 pp. each. Madrid.

It is with much satisfaction we observe the attention and success, with which the Spaniards cultivate the different branches of medical and physical science. The present work is commendable not only for conciseness, but likewise for a satisfactory account of the most important particulars relative to this department of physic.

The explanatory introduction is well written; the author's definition of pharmacy and its relation to medicine is accurate; his distinction between simple and compound bodies is correct, as well as his specification of their different genera, and the elementary view of the three kingdoms of nature.

In the Pharmaceutical Dictionary the different articles are well arranged, and clearly defined; a proof that the author is conversant with modern discoveries. Under the term ‘Vegetables,’ he treats of the philosophy of botany, and describes the usual plants, by the distinction of officinal and botanical. The whole is concluded with a synomical view of the old and new chemical nomenclature.

*Traité des propriétés, usages, et effets de la Douce amère, &c.*—“*A Treatise on the Properties, Uses, and Effects of the Solanum scandens, in the treatment of Ring-worms or Tetters:*” By Cit. CARRERE. 8vo. (3 livres.) Paris. Moutardier.

This work has been sanctioned by a most flattering report made by C. C. GEOFFRY and AUDREY, a committee appointed by the Medical Society

Society of Paris. It is, according to French ideas of Therapeutics, a valuable accession to the observations already published by the author, on this species of night-shade.

*Des Caractères, du Traitement et de la Cure des Dartres, &c.*—"On the Nature, Treatment, and Cure of Ring-worms or Tetter; Palsy of the lower Extremities; Convulsions; the Hooping Cough; Epilepsy; Tetanus, &c. by the use of the *Rhus radicans*, &c. By A. DUFRESNOY, 8vo. (3 livres.) Paris. Méquignon.

Although this publication belong more properly to the following head than to the present, as its subject is rather of a therapeutical than pharmaceutical complexion; yet, as the preceding work is principally written on the same subject, although we are no advocates for the introduction of *empirical practice*, (or what tends to the same disgraceful end—the encouragement of *specifics*), in justice, however, to the author of this volume, we shall repeat what he has himself asserted, that after a great number of experiments made in the course of *ten years*, with the *rhus radicans*, and a species of narcissus, which he terms *narcisse de près*, he has been able to perform a variety of cures in the diseases enumerated in the title page, by preparations made of these two plants, which have hitherto been little known or employed as medicines.

#### PRACTICE OF MEDICINE AND SURGERY.

*Medicine Praxeos, Compendium: symptomata, causas, diagnosis, prognosin, et mendi rationem exhibens.* Auctore, EDUARDO GOODMAN CLARKE, M. D. Collegii Regalis Medicorum Londinensis, nec non Exercitus Medico. Londini. In ædibus auctoris et apud bibliopolarum tabernas habendum. 1799. 214 pp. 12mo.—(Price Five Shillings sewed.)

In a short preface the author informs us, that he has composed this abridgment with the greatest attention, and arranged it chiefly according to the methodical nosology of Cullen. Indeed, it may well serve as a safe guide to the student, and occasionally to the young practitioner; as it affords a concise and perspicuous view of the principal diseases, together with the general indications of cure.

*Medical Strictures; being a concise and effectual method of curing the following Diseases: Colds, Ague, Small-pox, Measles, &c. &c.* By RICHARD CLARKE, M. D. 8vo. London. Rider. (Price One Shilling.)

This contemptible publication would deserve no notice, in our Journal, were it not for the sake of warning the reader against every species of delusion which is practised by ignorant pretenders, under the shield of scientific semblance. The whole of these 'Strictures' is the effusion of quackery; for under the pretence of treating and describing about *twenty-three* of the most common disorders, the industrious author renders his pamphlet the vehicle of advertising *thirty-one* different quack medicines—and *these*, according to the title pages, are "*the means of prevention, palliation, and cure, distinctly pointed out; and the whole adapted to general comprehension!*"

*Reflections on the propriety of performing the Casarean Operation: to which are added, Observations on Cancer; and experiments on the supposed origin of the*

*the Cow-pox.* By W. SIMMONS, Member of the Corporation of Surgeons in London, and Senior Surgeon to the Manchester Infirmary. *London.* Vernor and Hood.

In this interesting treatise the author first premises a concise but satisfactory historical account of the Cæsarean operation, and after duly balancing the arguments for and against that fatal section, which has been performed *eleven times* in this kingdom, and has proved mortal *in every instance*\*, he concludes this part of his ingenious 'Reflections' with the following decisive opinion on the subject:

"Upon the whole, then," Says Mr. Simmons, "in that supposed case of distortion (which I hope will never happen) in which the mother must be doomed to death, from the impossibility of delivering the child by the crotchet, the compound operation I have recommended will furnish a resource, approved by reason and sanctified by experience; inasmuch as the section of the symphysis pubis has been made, and the crotchet has been used though separately, yet with safety. Such a case will be attended, unquestionably with additional hazard; but it offers the only chance to the mother, to the preservation of whose life our chief care should be directed: and, I hope, that in future *all trace of the Cæsarean operation will be banished from professional books*; for it can never be justifiable during the parent's life, and stands recorded only to disgrace the art."

In his practical "*observations on cancer*," Mr. Simmons informs us, that he has prescribed a solution of arsenic, with singular advantage, in a case of confirmed cancer, by directing fifteen drops to be taken three times a-day; leaving it off for a few days, on account of an alarming general indisposition; and, when these threatening symptoms had subsided, returning to the former dose.

The author concludes with an account of some *experiments on the supposed origin of the cow-pox*; the result of these we extract in the following passages: "The limitation of the contagious power of the fluid supposed to occasion the cow-pox, and obtained from the horse's heel, to the first or erysipelatous stage of the grease, disproves the identity; and also destroys any analogy that might have been conceived to subsist between it and variolous matter.

"Twelve punctures were made in the teats of three cows, inoculated with the *ichorous* fluid, and it did not produce the smallest effect in either of them: six children were inoculated with the same sort of fluid, by making four punctures in the left arm of each, and no disease whatever ensued: eight punctures were made in the teats of two cows, and variolous matter was inserted; but not the smallest change took place; one single puncture, with diluted variolous matter, gave the small-pox to a child.

"The evidence, therefore, is as *one to twenty-four*, in the human subject, between variolous matter, and the discharge from the horse's heel; as *one to twelve* in cows; and between the insertion of variolous matter in man, and in cows, as *one to eight*.

"These experiments prove, first; that the cow-pox poison does not originate in the horse's heel; secondly, that the cows will not take the small-pox."

*Manuel de la saignée, &c. An Epitome of the Practice of Phlebotomy; or a Dialogue on that Operation.*—By ROCH TARDES. 12mo. (2 livres.) Paris Crulbois.

This

\* Osborn's Essays on Midwifery: p. 440.—Since the publication of this work several other cases have occurred, in which the Cæsarean operation is said to have been attended with the same fatal event; vide Mr. Simmons's Reflections. p. 29.

This little volume comprises the most useful information on the subject here treated; it is written in a manner lively and perspicuous, so that it cannot fail to be of some utility, especially to the young practitioner.

#### POPULAR OR DOMESTIC MEDICINE.

*Medical Admonitions addressed to Families, respecting the Practice of Domestic Medicine, and the Preservation of Health, &c.* by James PARKINSON. 2 vols. together 500 pp. 8vo. 9s. London. Dilly.

We have perused the above book with uncommon satisfaction and regret. Satisfaction with the design and subject of the work, as well as the manner in which it is executed: regret that it was not published many years ago. There are, perhaps, very few so sanguine as to expect that quackery can be prevented; though all are convinced that it destroys more in this island than the sword, famine, and pestilence united. To diminish the number of its victims is the object of the work before us. The author gives the following account of his design, in the beginning of the first volume: "My dear friend, I comply with the utmost willingness, with your request, to supply you with such information as may prevent you, on the one hand from unnecessarily incurring the expence of medical attendance in the various trifling ails to which you and your family may be subjected; and on the other, from sacrificing a friend, or perhaps a beloved child, by delay or improper interference, in some insidious disease."

(To be continued in our next Number.)

*Traité de l'éducation corporelle des Enfans, &c. A Treatise on the Physical Education of Children; or Practical Reflections on the Means of obtaining a Bodily Constitution most suitable to Republicans:* By J. C. DESSESTARTZ, Physician, Member of the National Institute, &c. The second edition enlarged with a Preface and Supplement, viith year. 8vo. pp. 514. (5 livres sewed.) Paris. Barrois.

Although the first edition of this work was published no less than thirty-three years ago, (1766), it has not become so extensively known as it well deserves. The supplement, which was not in the former edition, contains excellent precepts for mothers who wish to suckle their own children; a curious and well-selected catalogue of books on physical education; and lastly, what no book ought to want, a good index.

*Essai sur les maladies physiques & morales des femmes: An Essay on the Physical and Moral diseases of Women.* By B. LAFFECTEUR. 8vo. (1 liv.) Paris.

The author, in this small volume endeavours to include all the usual maladies incident to females, in the different ranks and periods of life, as well as the political evils to which the sex are subject in society. Upon the whole, the treatise before us possesses considerable merit; for, besides explaining the nature of the most common female disorders, Cit. Lafecteur ably comments upon the influence of the passions over the physical constitution of women, and forcibly inculcates the necessity of regulating the former for the benefit of the latter. He justly observes, that no one comes in a state of disease from the hands of nature; and that all disorders of the human body are more or less the consequences of the infraction of her laws; hence he draws the necessary inference, that the principal attention ought to be paid to air, climate, clothing, food, and other particulars of diet and regimen,

NEW

## NEW PUBLICATIONS IN APRIL.

*Medicina Nautica*: An Essay on the Diseases of Seamen; with communications by American Physicians on the New Doctrine of Contagion and Yellow Fever. By THOMAS TROTTER, M. D. Vol. II. London. Price 7s. 6d. Longman and Rees.

Ten Minutes Advice to the Afflicted in Nervous Disorders, by a Student in Medicine. London. Price 6d. Rivingtons.

(The new Foreign Publications in our next Number.)

## TO CORRESPONDENTS.

WE think it a duty incumbent upon us to acknowledge the favour of many communications we have received from our friends, as well as anonymous correspondents: but while we mention this flattering encouragement with peculiar gratitude and satisfaction, we cannot help observing, that several papers signed merely with initial letters—in answer to others accompanied with the signatures of their authors—have been transmitted to us for insertion. As it would evince a degree of injustice to admit such articles, especially on *controversial subjects*, we hope, that this will be considered a sufficient apology for their not appearing.—And as the names of places and persons, if written in a slight and imperfect manner, give frequent occasion to mistakes and errors of the press, our correspondents are particularly requested to write their names, as well as designations, *distinctly*, and *without abbreviations*.

There is another circumstance which we cannot pass over in silence: it relates to communications sent by empirics, with a view either to extol their medicines, or recommend their pamphlets—both are inconsistent with our professions, and the duties we owe to the public. Indeed, it has not entered into *our plan*, to circulate the prospectus of this Journal among the proprietors and venders of Nostrums; hence we shall, upon this occasion, only observe—"Quod MEDICORUM est, promittunt MEDICI:"—sed non omnes, qui VERAM promittunt VERAM MEDICINAM colunt.

Lastly, it being always desirable, that communications on *practical subjects* be laid before the public as soon as possible, we again request our correspondents to favour us with such articles *before the 15th of the month*; as otherwise, from our inability to insert them, both they and our readers must inevitably be disappointed.

## TO THE PUBLIC.

THE Proprietor of the MEDICAL AND PHYSICAL JOURNAL feels it his duty gratefully to acknowledge the liberal patronage with which the work has hitherto been honoured. It affords him, at the same time, the highest satisfaction to learn, that the plan and execution meet with the general approbation of the Faculty. The friends of the undertaking will doubtless be gratified to learn, that the sale of the two first numbers has already considerably exceeded that of any Medical Journal hitherto published in this country.

The great variety of valuable and original communications, authenticated by the respectable signatures of the writers, evinces, in the most unequivocal and flattering manner, the approbation and preference of the most intelligent of the Faculty. Testimonials so honourable and satisfactory, place beyond a doubt the complete and permanent establishment of the work.

The Proprietor cannot refrain, in justice to his own interest, and in confirmation of the preceding remarks, to subjoin copies of letters, with which he has been honoured from the three principal Medical Societies in the metropolis.

To Mr. PHILLIPS.

SIR,

*I am requested by the unanimous vote of the Physical Society, to return you their sincere thanks for the first and second numbers of the Medical Journal, which with much pleasure they add to their library.*

*I remain, Sir,*

*Your very humble Servant,*

Medical Theatre, Guy's Hospital,  
April 13, 1799.

GEORGE JOHNSON, Secretary.

To Mr. PHILLIPS.

SIR,

*I am desired by the Lyceum Medicum Londinense, to return their thanks to you, for presenting them with the Medical and Physical Journal.*

*I am, Sir,*

*Your's, &c.*

Lyceum Medicum Londinense,  
April 16, 1799.

J. CRUKE, Register.

To Mr. PHILLIPS.

SIR,

*The Presidents and Members of this Society voted you their unanimous thanks on the 9th inst. and ordered me to transmit the same by letter, for your liberal donation of the Medical and Physical Journal, which they had previously resolved to purchase.*

*I am, Sir,*

*Your obedient Servant,*

Medical Society, St. Bartholomew's Hospital,  
April 25, 1799.

CORNWALLIS HUNT, Secretary.

THE  
*Medical and Physical Journal.*

VOL. 1.]

JUNE, 1799.

[NO. IV.]

*History of the Inoculation of the Cow-pox.*

[Continued from page 217 of our last.]

*Further Observations on the Variolæ Vaccinæ, or Cow-pox:*

By EDWARD JENNER, M. D. F. R. S. F. L. S. &c. 4to.

64 Pages. 2s. 6d. Law, &c.

IN his first publication, Dr. JENNER's principal object appears to have been to excite an extensive inquiry into the origin, nature, and effects of the cow-pox. In this he has completely succeeded.

There is not, perhaps, in the annals of medicine, to be found an example of an experiment or inquiry, where the life and health of such numbers already born, and of all to be born, were implicated, that has been taken up more generally, received more candidly, or conducted more prudently, than this concerning the cow-pox.

In this second work it appears to be the author's principal concern, to guard the inquiry against misrepresentations, and inferences drawn from insufficient premises.

The following are the most important subjects introduced in it, viz.

1. The means of distinguishing the *real cow-pox* in the brute or human subject; and thereby of preventing the "unpleasant consequences" that might ensue, from confounding it with a *spurious disease*, which may have no power to defend the patient from the contagion of the small-pox.

2. As the inoculated cow-pox very rarely produces any anxiety in the patient or practitioner, unless perhaps in a few instances, respecting the local inflammation of the arm; Dr. Jenner solicits the attention of his brethren to the best mode of treating this species of erythema; and suggests some hints that the constitutional disease, on this, and other occasions, may be much modified by a modification of the local affection.

3. Some additional arguments are adduced, to prove that the variolæ vaccinæ are derived from the horse; and that the disease is contagious only by inoculation.



4. An inquiry into the cause of the variety which has been observed in a few cases of children inoculated in London, where an eruption appeared on the body, &c. resembling the small-pox.

Dr. Jenner introduces his work with the following account of his views in its publication.

“ Although it has not been in my power to extend the inquiry into the causes and effects of the variolæ vaccinae much beyond its original limits, yet, perceiving that it is beginning to excite a general spirit of investigation, I think it of importance, without delay, to communicate such facts as have since occurred, and to point out the fallacious sources from whence a disease, imitative of the true variolæ vaccinae, might arise, with the view of preventing those who may inoculate, from producing a spurious disease; and further, to enforce the precaution suggested in the former treatise, on the subject of subduing the inoculated pustule as soon as it has sufficiently produced its influence on the constitution. From a want of due discrimination of the real existence of the disease, either in the brute or in the human subject, and also of that stage of it in which it is capable of producing the change in the animal economy, which renders it unsusceptible of the contagion of the small-pox, unpleasant consequences might ensue, the source of which, perhaps, might not be suspected by one inexperienced in conducting such experiments.

“ Ere I proceed, let me be permitted to observe, that truth, in this and every other physiological enquiry that has occupied my attention, has ever been the object of my pursuit; and should it appear in the present instance, that I have been led into error, fond as I may appear of the offspring of my labours, I had rather see it perish at once, than exist and do a public injury.

“ I shall proceed to enumerate the sources, or what appear to me as such, of a spurious cow-pox.

“ 1<sup>st</sup>. That arising from pustules on the nipples or udder of the cow, which pustules contain no specific virus.

“ 2<sup>dly</sup>. From matter (although originally possessing the specific virus) which has suffered a decomposition, either from putrefaction, or from any other cause less obvious to the senses.

“ 3<sup>dly</sup>. From matter taken from an ulcer in an advanced stage, which ulcer arose from a true cow-pox.

“ 4<sup>thly</sup>. From matter produced on the human skin from contact with some peculiar morbid matter generated by a horse.

“ On

" On these subjects I shall offer some comments.

" One of the first objects of this pursuit should be, to learn how to distinguish with accuracy between that peculiar pustule which is the *true* cow-pox, and that which is spurius. Until experience has determined this, we view our object through a mist. Let us for instance suppose, that the small-pox and the chicken-pox were at the same time to spread among the inhabitants of a country, which had never been visited by *either of these distempers*, and where they were quite unknown before; what confusion would arise! The patient who had gone through the chicken-pox to any extent, would feel equally easy with regard to his future security from the small-pox, as the person who had actually passed through that disease. Time and future observation would draw the line of distinction. So I presume it will be with the cow-pox, until it is more generally understood. All cavilling, therefore, on the mere report of those who *tell us* they have had this distemper, and are afterwards found to be susceptible of the small-pox, should be suspended. To illustrate this, I beg leave to give the following history.

Dr. Jenner then details a case of a young woman, who took the cow-pox as she supposed, by milking infected cows, and afterwards experienced the small-pox. This case is so similar to those which have been lately mentioned in conversation, as proofs of the inefficacy of the variolæ vaccinae to protect the system from the small pox, that little or no doubt can remain of their identity; and sufficiently proves, on what slight evidence popular rumours are commonly founded. Dr. Jenner observes:—" Had any one conversant with the habits of the disease, heard this history, he would have had no hesitation in pronouncing it a case of *spurious* cow-pox.

" This is, perhaps, the most deceptive form in which an eruptive disease can be communicated from the cow, and it certainly requires some attention in discriminating it. The most perfect criterion by which the judgment may be guided is, perhaps that adopted by those who attend infected cattle. These white blisters on the nipples, say they, *never eat into the fleshy parts*, like those which are commonly of a bluish cast, and which constitute the *true cow-pox*, but that they affect the skin only, quickly end in scabs, and are not nearly so infectious." P. 8.

On the *second* source of disappointments and false inferences, Dr. Jenner says:—" I consider it of very great importance, and I could wish it to be strongly impressed on the minds of all who may be disposed to conclude hastily on my observations, that *imperfect variolous matter* will, by inoculation, produce a disease, but not such an one as will render them less

unsusceptible of the *small-pox*." This opinion is supported by a reference to a considerable number of facts, some mentioned in the author's first treatise, others in the Memoirs of the Medical Society of London, vol. iv. and several in the present publication.

*Thirdly*. "That the first-formed virus, or what constitutes the true cow-pox pustule, invariably possesses the power I have ascribed to it, namely, that of affecting the constitution with a specific disease, is a truth that no subsequent occurrence has yet led me to doubt. But as I am now endeavouring to guard the public as much as possible against erroneous conclusions, I shall observe, that when the pustule has degenerated into an ulcer (to which state it is often disposed to pass unless timely checked), I suspect that matter possessing very different properties, may sooner or later be produced; and although it may have passed that stage, wherein the specific properties of the matter secreted are no longer present in it, yet, when applied to a sore, as in the casual way, it might dispose that sore to ulcerate, and from its irritation the system would probably become affected; and thus, by assuming some of its strongest characters, it would imitate the genuine cow-pox." P. 20.

*Fourthly*. "Whether the cow-pox is a spontaneous disease in the cow, or is to be attributed to matter conveyed to the animal, as I have conceived, from the horse, is a question, which though I shall not now attempt fully to discuss, yet I shall digress so far as to adduce some further observations, and to give my reasons more at large, for taking up an opinion that to some has appeared fanciful. The aggregate of these observations, though not amounting to positive proof, forms presumptive evidence of so forcible a kind, that I imagine it might on any other person have made the same impression it did on me, without fixing the imputation of credulity." P. 21.

Dr. Jenner then introduces a number of considerations, the weight of which had induced him to adopt this opinion, and which we think abundantly sufficient to justify his giving it to the public.

The next subject, which Dr. Jenner thinks of sufficient importance to demand the particular attention of medical men, is the effect of local applications to the incised part. P. 31—59.

"Conceiving these cases to be important, I have given them in detail; first, to urge the precaution of using such means as may stop the progress of the pustule; and, secondly, to point out, (what appears to be the fact) that the most material indisposition, or at least that which is felt most sensibly, *does not arise primarily from the first action of the virus on the constitution; but that it often comes on, if the pustule is left to chance, as a secondary disease.*

Although

"Although the application (ung. hydr. nitr.) I have mentioned in the case of Mary Hearn (p. 31), proved sufficient to check the progress of ulceration, and prevent any secondary symptoms, yet, after the pustule has duly exerted its influence, I should prefer the destroying it quickly and effectually to any other mode. The term *caustic*, to a tender ear (and I conceive none will feel more interested in this inquiry than the anxious guardians of a nursery), may sound harsh and unpleasing; but every solicitude that may arise on this account will no longer exist, when it is understood, that the pustule, in a state fit to be acted upon, is then quite superficial, and that it does not occupy the space of a silver penny. I mention escharotics for stopping the progress of the pustule, because I am acquainted with their efficacy; probably more simple means might answer the purpose quite as well—such as might be found among the mineral and vegetable astringents." We are authorised to say, that Goulard's extract has been found to succeed completely.

Dr. Jenner presents his readers with several facts, tending to prove, that the arresting the variolous or vaccine disease in its progress, as soon as the system is perceived to sympathise with the local affection, does not diminish the future security of the patient.

He inculcates the idea (suggested in his 'inquiry,' &c. p. 54), that the disease may be much modified by attention to the local affection; and hints an opinion, that several *varieties*, of both diseases, may be produced by a skilful attention to the incised part of the arm (p. 37); and at p. 39, the author sums up this part of the subject with the following observations:—"Seeing that we possess the means of rendering the action of the sores mild, which, when left to chance, are capable of producing violent effects—and seeing, too, that these sores bear a resemblance to the small-pox, *especially the confluent*, should it not encourage the hope, that some topical application might be used with advantage, to counteract the fatal tendency of *that disease*, when it appears in this terrific form? At what stage, or stages of the disease, this may be done with the most promising expectation of success, I will not pretend now to determine; I only throw them out this idea as the basis of future reasoning and experiment."

Dr. Jenner next suggests some improvements in the *manner* of inserting the virus in inoculation, and in distinguishing the best time for taking the matter from the pustule; and adds:—"In the present early stage of the inquiry (for early it certainly must be deemed), before we know for an absolute certainty, how soon the virus of the cow-pox may suffer a change in its specific properties, after it has quitted the limpid state it possesses when forming a pustule, it would be prudent for those who have been inoculated with it, to submit to variolous inoculation." P. 42.

There

These three patients were inoculated with *variola* matter in the *right* arm; the first on the 20th of December—Miss Colborne and Miss S. Colborne on the 21st (each respectively on the eighth day from the first inoculation with *cow-pox* matter); and in all of them the usual progress of infection from variolous matter took place, both in the appearance and symptoms; so that the axilla of T. Vick was affected on the sixth day from the second inoculation, and in the evening of the seventh the eruptive fever came on, which proved slight, he pursuing his business the whole time and a few pustules followed. In Miss Colborne the eruptive fever came on in the evening of the seventh, which went off on the ninth, except leaving a slight uneasiness in the axilla, and a slight feverishness for an evening or two more; and ten or twelve pustules followed. Miss S. Colborne ailed on the 10th, and was well on the 12th, and had three or four pustules.

The effects of the first inoculation with *cow-pox* matter, in Miss E. Colborne and W. King, were as follow:—In Miss E. Colborne, the inflammation (which appeared nearly the same on the second day, as in the three above related, gradually increased, so that by the ninth it was of the extent of half an inch in diameter. A scab, which had been repeatedly rubbed off, probably occasioned by the part itching in the night, was renewed. She was observed to be fretful on the eighth day, and on this day two or three pimples, like those of Miss Colborne and Miss S. Colborne, appeared, and disappeared on the ninth. By the tenth, the inflammation was of the extent of a sixpence; the vesication surrounding the scab was about one-sixth of an inch, containing matter, which seemed to be purulent. Hitherto the efflorescence was hardly distinguishable from the redness accompanying the induration of the skin; but by the fifteenth day, when the redness and hardness was of the extent of a shilling, the margin of the efflorescence was of the extent of a crown-piece, and of a bright colour; betwixt which and the redness and induration, was an interval of skin of the natural colour. At this time, the scab falling off, left a sore of one eighth of an inch in diameter, at first superficial, but in three days more got through the skin—the inflammation increased. Cooling, saturnine applications, and ung. hydrag. were applied; by which the inflammation was lessened, but not sufficiently to prevent two small suppurations, a little above the sore occasioned by the puncture, one towards the inside, the other towards the outside of the arm, each of the extent of a shilling, and which were ready to burst on the twenty-sixth day: that on the inside burst soon afterwards, and readily healed; that on the outside, communicating with the sore from the puncture, was kept from bursting some days longer. On the 4th of February (the fifty-second day,) neither sore nor induration remained. She had no illness, excepting the slight one mentioned on the eighth

eighth day ; and although the arm undoubtedly teased her, she ate her food, and played with her sisters as usual the whole time.

In William King, the inflammation which appeared on the second day, nearly as in the other patients, gradually increased, as in Miss E. Colborne, so that by the 9th day it was of the extent of one eighth, and the vesication in its centre, one tenth of an inch, with three or four pimples near it. On the 11th day, a conflux of small pustules uniting with the vesication, the latter by the 15th day was of the extent of one sixth of an inch, with a small scab in its centre ; its surrounding redness and hardness of the extent of a shilling. The efflorescence appeared on the 10th day, gradually spread till the 15th, growing duller towards the centre, the margin continuing of a bright colour, when it extended one third the circumference of the arm ; it had not quite disappeared on the 18th. On the 8th day, the axilla began to be affected with stiffness, which continued to the 11th, then abated, and on the 14th went quite off. On the 9th day, he had a slight head-ach. On the 18th, the central scab put on the appearance of an eschar ; and a day or two afterwards, the surrounding induration was of the extent of a half-crown piece ; it seemed confined to the skin, as it was moveable over the muscles. From this time the induration lessened, and after the separation of the eschar, which happened on the 29th, occasioning a sore, which, from the thickened state of the skin, appeared of the depth of a quarter of an inch ; and applying ung. hydrag. soon went off, and the sore healed. His arm was so little troublesome, that he went on with the usual business of the house the whole time. Perhaps few, if any, practitioners would have been able, by the sight or touch, to have distinguished the state of the arm from that occasioned by the insertion of variolous matter, previously to the 18th day.

Notwithstanding we were persuaded that the *cow-pox* matter had taken the desired effect in Miss E. Colborne and W. King, the family being surrounded by the small-pox, from a general inoculation having taken place, it was thought prudent to inoculate them with *variolous matter*, in the *right arm*, at the same time with Miss C. and Miss S. Colborne. viz. on the 8th day from the inoculation with *cow-pox* matter. In both, the punctures in the *right arm* inflamed earlier than they usually do after a first inoculation (as is common where a second inoculation is made so soon after the first, where *variolous* matter is used) : they became small pustules, without any previous accompanying illness, without any affection of the axilla, or subsequent pustules.

These two patients were inoculated a third time on the first of January, the 12th day from the second, and 19th from the first inoculation, with

limpid *variolous* matter taken from the vesication of the right arm of Miss Colborne, and immediately inserted. This was not followed by any inflammation, the punctures being hardly perceptible either on the 5th or 8th day.

This account of the above patients being given neither from *hearsay evidence*, nor from memory, but from notes taken at the time the observations were made, the reader will judge what credit is due to the *authentic information*\* procured, and lately published concerning them, and will make his own remarks. For my own part, I did consider at the time, and do still consider, the inflammation of Miss E. Colborne's arm, as a *troublesome* and *disagreeable*, but not as an *alarming* and *dreadful* circumstance.

I remain, very respectfully,

Dear Sir,

Your humble servant,

Stroud, 9th May, 1799.

T. HUGHES."

P. S. In the above narrative it is noticed, that Miss Colborne was thought to be a little heavy on the 8th day from the first inoculation with cow-pox matter, and that she and Miss S. Colborne, who did not take the infection of the cow-pox, as well as Miss E. Colborne, who did, had an eruption of pimples on that day, which disappeared on the next. Nothing but the most scrupulous regard to mention every circumstance that occurred during the process of inoculation, could have induced me to insert these; for the heaviness, if any, in Miss Colborne, was very slight, and the pimples in all were so minute, and so transient, that without a different state of the inoculated part, they could not have been considered by any practitioner as signs of infection having taken place, and I am persuaded would, at any other time, have passed unobserved."

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In the Gloucester Journal for May 13th, we observed a letter on the cow-pox, signed C. COOK, in which the following passages occur, viz.

"Permit me to remark, that I not only *very much doubt cow-pox being a permanent preventive from small-pox*, but I am confirmed in this opinion by *occurrence in my own practice*, by *conversing with many medical gentlemen upon the subject*, and by an *additional account received from Dr. BARNES*, who writes (alluding to a publication edited by him) '*I have added a case, where small-pox was taken after cow-pox had been twice gone through.*' Great advantage, however, may arise in practice from the present

present investigation ; because, knowing that cow-pox has a *temporary influence* upon small-pox, we can suppress the progress of it by immediately inoculating cow-pox ; and could we ascertain the time to which the influence of inoculated cow-pox extends itself, we might always lessen the hazard of small-pox recurring, by repeating the inoculation of cow-pox when necessary.

“ I will only add, that a spurious kind of cow-pox sometimes occurs, and is an objection to the new mode of inoculation ; but *I most heartily wish* every advantage and satisfaction may be derived from a full investigation of this subject ; and remain your obliged servant, &c.

*Gloucester, May 9th, 1799.*

We shall be much obliged to the writer of the letter, or any other Gentleman, for an account of any occurrences which tend to confirm his opinion, as we have never been able to find one unequivocal case of small-pox following the true cow-pox, though we know many instances where all probable means were used to infect the patients with small-pox, and this at very different intervals after their having undergone the cow-pox.

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*Reports of a Series of Inoculations for the Variolæ Vaccinæ, or Cow-pox ; with Remarks and Observations on the Disease, considered as a Substitute for the Small-pox :—*By WILLIAM WOODVILLE, M. D. Physician to the Small-Pox and Inoculation Hospitals, 8vo. 156 p, London, Phillips and Son.

DR. WOODVILLE introduces his work with an account of Dr. JENNER's first publication, and the impression it made upon him. In consequence of experiments made with the matter of grease at the Veterinary College, Mr. SIMMONS's Experiments, and Dr. PEARSON's Inquiry. p. 83, 84, &c. Dr. Woodville concludes, that the vaccine disease is not derived from the horse.

“ But though Dr. Jenner seems to have been misled with respect to the origin of the cow-pox, still his facts and observations concerning its effects upon mankind, are not less valid and important ; nor did I feel the less desirous to try how far they would be invalidated or confirmed by a more enlarged experience than he had the opportunity of acquiring.

At p. 12 is given an account of the case of Sarah Rice, a milker, of which a representation is attempted in the plate designed for our first Number.



ber. Dr. Woodville then proceeds : " Before relating the cases of inoculation with the matter of cow-pox, I have judged it proper in the first place briefly to state what are the local effects produced by inoculating variolous matter, so that the progress of the infection in both cases may be compared, and the subject of inoculation at large, be better understood.

" In cases wherein inoculation of the small-pox proves effectual, a small particle of variolous matter being applied by a superficial puncture of the skin, usually produces in the course of three or four days, or sooner, a little elevation of the punctured part, discoverable by the touch, and a red speck distinguishable by the eye. From this time the redness advances in a circular form, more or less rapidly, according to the constitutional circumstances of the patient ; and the first effect of this superficial inflammation is the formation of a vesicle upon its centre, which usually appears between the 4th and 7th day after the inoculation. The extent of this vesicle is generally found to bear some proportion to the intensity of the inflammation ; and contains a limpid fluid, by the absorption of which the small-pox is produced. The vesicle soon bursts, and the central part of the puncture becomes depressed, and often of a dark hue, which appearances, together with the marginal inflammation, continue to increase, till the eruptive symptoms subside, when the edges of the depressed part begin to swell with a purulent fluid, and the inflammation gradually recedes.

" Thus it appears that the variolous matter, first inserted by the puncture, like that of other morbid poisons, is not capable of being immediately absorbed, but lodges in the skin, and there excites an inflammatory process, by which a new matter, producing the disease, is generated \*. It would seem also, that this process is carried to a greater or less extent in different persons before the matter enters the absorbents, owing probably to the greater or less aptitude in these vessels to receive it. Hence we find the local inflammation in some cases considerably advanced, before the system becomes affected ; while in others the eruptive symptoms supervene, when it appears to have made but very little progress ; and therefore, though the eighth day after the inoculation proves the usual period at which the patient feels indisposed, yet this frequently happens much sooner or later, and the progress of the cow-pox infection will be found to take the same latitude.

" Monday, January 21, 1799, I took the matter of cow-pox, in a purulent state, from the teats of a cow, with which I immediately inoculated  
seven

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\* " In the second Volume of the ' History of Inoculation,' (now nearly ready for the press) I have endeavoured to shew that the general greater mildness of the inoculated than the casual small-pox, depends upon this circumstance."

seven persons by a single puncture in the arm of each, or rather by scratching the skin with the point of the lancet, till the instrument became tinged with blood."

Dr. Woodville then commences his detail of the cases which he inoculated between the 21st of January, 1799, and the 18th of March following, amounting to *two hundred*.

Nearly the whole of these persons were subsequently inoculated with variolous matter, and many of them exposed to persons labouring under this disease, without a single instance of the small-pox being produced, after the vaccine infection had taken effect. The *forty-ninth* case is that of Mr. Walker's child, given in our second Number.

For the usual course of the cow-pox we refer our readers to the work itself, and the account we have given in our preceding Numbers.—At p. 115, Dr. Woodville gives a tabular statement of the progressive descent of the cow-pox infection from patient to patient, as well as the magnitude of the disease which was excited by the inoculation. From the table, which extends much beyond the detail of cases, we collect the following *Facts*:

1. That out of about 500 cases of the inoculated cow-pox, one proved fatal; and that in some others, the disease, from the number of pustules was of formidable severity; while, on the other hand, a very large proportion of the patients were scarcely disordered from the inoculation, and had no pustules. p. 149.

2. That the matter of the vaccine disease has generally produced much fewer pustules and less indisposition than that of the small-pox. p. 150.

3. That about two-fifths of all the persons inoculated for the variolæ vaccinæ had no pustules; and that in not more than a fourth part of them was there experienced any perceptible disorder of the constitution. *Ibid.*

"But it must be acknowledged," continues Dr. Woodville, "that in several instances the cow-pox has proved a very severe disease. In three or four cases, out of 500, the patient has been in considerable danger, and one child, as I have already observed, actually died under the effects of the disease. Now, if it be admitted, that at an average, one of 500 will die of the inoculated cow-pox, I confess I should not be disposed to introduce this disease into the Inoculation Hospital, because out of the last 5000 cases of variolous inoculation, the number of deaths has not exceeded the proportion of one in 600. But I am inclined to think, that if the matter of the cow-pox used for the purpose of inoculation, were only taken from those in whom the disease appeared in a very mild form, the result would

be

be more favourable than in the statement here given. For though it has occasionally happened that the matter taken from the arm of a patient, in whom the disorder neither produced fever nor eruption, has in others produced both ; yet still it has much more commonly had the effect of exciting a milder disease than the matter of the pustules, or than that which was obtained from a patient who had the disease in a severe manner, as may be seen by an examination of the table.

### *To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

I SHALL feel obliged to you to insert, in your next number, the following observations on MAYOW'S DISCOVERIES, in answer to Dr. Lubbock, on the same subject.

I am fully convinced that the writings of Mayow spread with considerable rapidity throughout Europe, as can be easily proved from Morhof and others. Notwithstanding, however, this diffusion of his doctrines, they do not appear to have been generally received in the full and strict sense in which Mayow wished them to be understood : almost all the writers who mention his doctrine, confounded his fire-air particles with the particles of nitre. From this circumstance it is, as I have said in the introduction, "that many, by not understanding him, rejected his opinions, and others attributed to him doctrines which he never held." Among these we may particularly mention Sehelhamerus, who exclaims with a degree of sarcastic envy, *Quæ sententia*, (the absorption of nitrous particles by the lungs) *est novitatum amans hoc seculum*, statim ab omnibus vel tantum non omnibus Anglis, Batavis, Gallis-Germanis, avidè arrepta est. De nitro, p. 100. This subject is fully explained in observations on modern discoveries, p. 240. Two of the authors also quoted by Dr. Lubbock, viz. Dr. Connor and Mr. Tabor, have made no discrimination between particles of nitre, and fire-air particles ; the others may have likewise fallen into the same error, but this I cannot assert, not having seen their works, and the passages are not detailed.

Although I do not believe that Mayow's doctrines were favourably received immediately upon their publication, yet I am far from asserting, with Dr. Beddoes, that his name was never echoed by popular applause ; and, at the end of the 14th Sect. of my work, I have said, that I was happy, from the investigation gone through, in being able to contradict this too hasty conclusion ; for his opinions had been adopted and commented

upon by Wolferstan, Baglivi, Morhof, Collins, Verhayen, Hales, Drake and Haller, and it affords me sensible satisfaction, to add the names mentioned by Dr. Lubbock.

During Mayow's life, however, not much notice seems to have been taken of his writings. In no work which I have consulted, published during his life, do I find his name mentioned, or a distant hint of his doctrine : and what appears to me surprising is, that in a thesis which Thrufton read for his degree at Cambridge, in 1664, but which was not published for several years after, he makes no mention of Mayow, notwithstanding he entertains ideas very similar to Mayow's concerning respiration. Thrufton's opinion, too, had been freely canvassed by some, as he himself tells us "*quod theoriæ meæ, a nonnullis publicè sed suppresso meo nomine, impugnata.*" Lower's '*Tractatus de Corde*' was published during Mayow's life, and the fourth edition, twelve years after Mayow had given to the world his '*Experiments and Observations on Respiration*;' yet not a word concerning Mayow is to be found, notwithstanding Lower was one of the first who observed the change of colour which the blood acquires in the lungs, and which was so beautifully illustrated and confirmed by the ingenious experiments of Mayow, vide pp. 105 and 124 of '*Observations on Modern Discoveries.*' The Reviewer in the '*Phil. Transact.*' did not once smile upon his labours; Jocker, in his '*Lexicon*,' asserts he was not noticed during his life; and Wood, in his '*Athenæ Oxon*' gives but a very scanty and superficial account of him, which would not have been the case, I think, had his works been earlier attended to. He died in 1679, and I do not find his name mentioned till the following year, twelve years after the publication of his *Treatise on Respiration*; a short period, it will be said, but from which we may, nevertheless, in some degree, infer a neglect of his opinions.

The philosophy of Mayow was published in an age remarkable for its production of great literary characters. Cotemporary with him were Boyle, Newton, Lower, Willis, and innumerable others, whose labours have considerably improved the sciences: Harvey had but lately discovered the circulation; the philosophic world was engaged in examining the Newtonian and Cartesian doctrines; and the theory of Stahl was just adopted by chemists, and was in the full career of its glory. Germany was now famous, all over Europe, for its production of able chemists; and men were much attached to the chemical labours of that country, which had given birth to Becher, to Van Helmont, and to Stahl. It was impossible for a man who died at the early age of thirty-two, however true his theory, or just his system, to oppose with success such accumulated obstacles. No champion would be found hardy enough to stem the tide of popular opinion, with theories and experiments not his own; and it is not likely, that  
many

many would risk their literary reputation in defence of doctrines, which appeared to meet with general disapprobation. Thus it was that the opinions of Mayow did not attract notice till many years after his death, when his works were read and admired by some of the first philosophers of the age. His opinions, however, were not generally understood, so as to form a system; the public mind was not ripe for improvement, and thus it was that his theories were lost in the great mass of discordant doctrines.

I have certainly said, that Munday does not mention Mayow. The edition I used may be different from Dr. Lubbock's; at any rate, in addition to my want of leisure at the time, I found so much jargon, that it was with difficulty I got through as much as I did. I have been informed that there is a family now living in Cornwall of the same name with Mayow; and according to Wood, he was descended from a family living at Bree, in the same county.

I shall always hold in veneration the extraordinary abilities of this great genius, the Newton (as Dr. Lubbock very deservedly styles him) of chemical science; and I feel happy in being able here to repeat, from further testimonies, what I have elsewhere observed, that "the name of this great man is now restored to the annals of science; his genius is acknowledged, his abilities admired, and his opinions confirmed. The unequivocal concurrence of respectable testimonies has added lustre to his literary fame; and may the laurel of merited reputation continually flourish, unfaded, which the fatigues of discovery have wreathed about his brow.

I am, GENTLEMEN,

Your's, &c.

Bedford, May 10, 1799.

G. D. YEATS.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

I Have taken the liberty of enclosing a case which came under my care a few months ago, in which the trephine was used to great advantage.

It was a detachment of the dura mater from the cranium with extravasation, occasioned by a fall.

If you think it worthy of a place in your monthly publication, the insertion of it will much oblige.

GENTLEMEN,

Your very humble Servant,

THOMAS CAM, Jun.

Surgeon to the Infirmary at Hereford.

Hereford, April 21<sup>st</sup>,

1799.

I was

I was sent for to a boy of about twelve years of age, upon the fourth of June last, who, as he was leading a colt to a blacksmith's, met in the road a one-horse chaise, which it startled at, and immediately set off; the boy having the halter twisted several times round his arm, was thrown down with great violence, and dragged a considerable distance before he was disengaged. In an hour after the accident I saw the lad, whom I found apparently in a dying state; he was extremely cold and languid, his pulse hardly perceptible, and his respiration much oppressed: I with much difficulty opened his mouth, and poured down some wine, which after being repeated four or five times, seemed to revive him; and when he was a little recovered from his excessive languor, I began to examine the injured parts. The first thing that presented itself was a small wound above the os frontis, with a mere detachment of the scalp from the pericranium two inches in length, but no fracture or depression; the right clavicle was broken, and his back, arms, and legs, very much bruised. His head having suffered materially from the concussion, I opened the temporal artery, but as the quantity of blood taken away, I judged not sufficient, I bled him in the arm. After this treatment he breathed with more ease, and I left him much better than I could possibly have expected. In the evening I saw him again, and as he was much heated, with a full pulse, and great restlessness, I took more blood from him. The next day he was quite as restless, but his heat had nearly left him; some aperient medicines were given, and with the assistance of glysters, evacuations were procured. On the third day he was with difficulty kept in bed, and could not be prevailed on to take the least nourishment. On the fourth day, finding him not relieved, I removed the whole of the detached scalp, which appeared a little discoloured, but no discovery of the nature of the injury could be made. On the fifth day, not being any better, his pulse irregular, and his fæces and urine passing involuntarily, I applied the trephine. When the cranium was elevated a sanious fluid was discharged, the dura mater was separated from it, and the vessels turgid. On the next day after the operation, which was the sixth, he remained just in the same state, and very delirious. When the dressings were removed, a considerable quantity of the same kind of fluid had made its escape, and all the former symptoms continued. On the eighth day there was very little discharge, the cerebrum entirely filled up the opening in the cranium. Upon pressing the dura mater with my finger, more of the sanious fluid rushed from the lower part of the frontal bone. On the ninth day observing no amendment, I used the trephine again, to make a more depending outlet for the discharge; the dura mater was covered with a dark slough, and as the disease extended fur-

ther, I repeated the operation in two more places, to put me in possession of all the injured parts. On the tenth and eleven days he was not much improved in his health, but upon the twelfth, he became more calm, evidently shewed signs of returning reason, took his food, and was composed. On the thirteenth, full as well as the day before. On the fourteenth day, still improving; and upon the fifteenth the parts were covered with a well-digested pus. On the sixteenth and seventeenth days the fore put on a very healthy appearance, and he took the cortex with apparent advantage. On the twenty-first day he was brought to Hereford for the convenience of attendance, a distance of four miles. At the end of two months, he returned into the country, and walked backward and forward to be dressed; the wound was then contracted to a very small size, but prevented from quite healing, by some trifling exfoliation. The boy is perfectly recovered, and though weakly before the accident, now enjoys a good share of health.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

I AM desired by the Committee of the Lyceum Medicum Londinense, to send you the enclosed, being the Prize Question of that society for the ensuing year, and to request you will have the goodness to insert it in your next Number.

I am, GENTLEMEN,

Your humble Servant,

Thursday, May 23, 1799.

JOHN CRAKE, Registrar.

PRIZE QUESTION.

An acid precipitates a substance from the bile similar to the resinous substances of plants, which is insoluble in water:—why does this precipitation take place? The same substance is often separated in the gall-bladder and duct, forming concretions:—how is this precipitation produced? and is there any method by which it may be prevented, or by which it, when precipitated, may be re-dissolved?

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

NOTWITHSTANDING the great improvements which have been made in the art of medicine, within the present century, there is one branch of it, which has, till of late, been but little attended to—I refer to the treatment of incurable and mortal diseases: this is doubtless a subject of considerable importance: I shall therefore, without further apology, make a few observations on the treatment of a disease, which comes most unequivocally under the above description: I mean *aneurism of the aorta*, or of its more immediate branches. In cases of this kind, the practitioner has in general thought himself fully justified in leaving the patient quietly to his fate; but I was once witness to a case of aneurism of the right subclavian artery, in which the *digitalis* was from time to time exhibited in small doses, and I think the patient's life was obviously protracted by this mode of treatment. The well-known property which this drug possesses of lessening the force of the circulation, it may readily be supposed was the circumstance which induced the practitioner to make use of it on this occasion. Whether or not the practice is singular, I am unable to determine; but I think it is certainly worthy of imitation.

It unfortunately happens, that the case of aneurism of the aorta, or its more immediate branches, cannot always be ascertained during an early stage of the disease; where it can, however, I think the exhibition of the *digitalis*, together with an attention to avoid all causes which might hurry the circulation, would go near to check the progress of the tumor altogether, or at least render its growth very slow, and lengthen the life of the patient.

Should you think these hints worthy of being made public, they are very much at your service.

London, May 10, 1799.

R. B. M.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

I Herewith send you the morbid appearances of a subject I opened last week: the particulars of his illness I am not acquainted with; I was informed by the physician who attended him, that he had laboured two years under spasmodic asthma, with a constant throbbing of the heart. Last Thursday, while walking out of his house in Cavendish-square, to get in his carriage, he dropped down and expired immediately.

*Appearances*



*Appearances on Dissection.*

In the right ventricle of the heart there was a mass of coagulable lymph, which extended into the neighbouring large vessels, very firm, and of a light yellow colour; it did not fill up the cavity completely. The apex of the left ventricle was dilated into a pouch, about the size of a large walnut. There was an aneurism at the arch of the aorta; the latter was enlarged beyond its usual size. The three femilunaries were thickened and opaque. The coats of the pulmonary artery were elongated and of a light reddish colour. The valvulæ mitrales were nearly obliterated. The lungs were full of tubercles, mostly in a state of supuration. The liver was enlarged, and there were two calculi, very small, in the *ductus hepaticus*. The other viscera were perfectly found.

Your obliged,

Hatton Garden,  
May 10, 1799.

CHARLES BROWN.

P. S. I am under the necessity of deferring my paper on the antivenereal virtues of the *hydrargyrum phosphoratum*, and my experiments with the *yellow oxyd of tungsten*, till I have leisure to complete both.

*Account of the Use of an Instrument for cutting the Cornea,  
in the Operation of extracting a Cataract.*

By A. CARLISLE, Surgeon to the Westminster Hospital.

A Few days ago, it fell in my way to see an instrument which had been used with success at Paris, and in other parts of the Continent of Europe, for making the incision of the cornea, in the operation of extraction. The great difficulty of finding the globe of the eye, and the consequent tediousness, as well as incertitude of performing the incision, induced me to try the instrument to be described.

Having previously decided in my own judgment, that depression is a less efficacious operation than extraction, provided the latter be performed with due attention and dexterity, and having found that nearly the whole of the success turned upon the incision of the cornea, the following case presently occurred:—A blind woman, having had one eye spoiled by an attempt at depression, and the other useless from a complete cataract, was pitched upon for the operation. The subject was a very indifferent one, being old, and afflicted with chronic inflammation of the eye-lids. The globe of the eye, however, during the operation, was tranquil; the incision was made satisfactorily, and without

any other assistance, the opaque crystalline lens jumped out. An undue degree of pressure occasioned the flow of a small quantity of the vitreous humour, nevertheless the patient recovered her perfect sight. Mr. LYNN, senior surgeon of the Westminster Hospital, has also employed the same instrument with perfect success as to the incision; but as the cases are both now under treatment, the result cannot be ascertained.

The form and particular mechanism of this instrument is not easily described in words; and an expensive plate would only gratify curiosity, without enabling the instrument-maker to form one with that accuracy which this nice operation requires. Mr. STODART, an eminent surgeon's instrument-maker, in the Strand, has paid particular attention to this instrument, has seen it used, and made himself acquainted with all its needful qualifications; he has it for sale. It consists of a plate of brass, with a loop, or ring, of the size of the transparent cornea, fixed at a right angle with one end of the plate. The eye-lids being held open, the cornea is made to project through this ring, so as to expose nearly the whole of its transparent part beyond its inner edge. A cutting blade of steel is made to slide close against the inner surface of this brass loop, which is acted upon by a strong steel spring. When cocked, the blade is carried beyond the right edge of the ring; and when let off by a trigger, it passes through the lower half of the cornea, cutting a flap of a semicircular form at its lower edge. The other part of the operation is then to be conducted as usual. An adjustable screw alters the distance of the cutting blade from the ring through which the cornea protrudes, so as in some measure to adapt the instrument to eyes of different diameters. The ring itself is also made removeable, so that one of the size required may be chosen.

If there is any objection to this mode of dividing the cornea, it rests with the circumstance of the sudden collapse of the globe of the eye, endangering the protrusion of the vitreous humour, before the muscles of the globe are sufficiently aware of the resistance taken from that body, or before they recover from the shock which this incision communicates to the whole organ. Still, however, taking into consideration the difficulty, and even sometimes total impossibility of making a good incision with the hand, I should conceive that the use of this instrument may be attended with beneficial consequences in this country.

## STATE OF DISEASES IN LONDON.

*Account of Diseases in an Eastern District of London, from the 20th of April to the 20th of May.*

ACUTE DISEASES.			No. of Cases.		
Typhus Mitior	-	3	Vomitus	-	2
Peripneumonia Notha	-	4	Dyspeptia	-	7
Catarrh	-	7	Gastrodynia	-	6
Ophthalmia	-	5	Hæmorrhoids	-	2
Acute Rheumatism	-	7	Dysuria	-	4
			Herpes	-	3
			Tinea	-	2
			Pfora	-	1
			Jaundice	-	2
			Hysteria	-	4
			Hypochondriasis	-	5
			Palpitation of the Heart	-	1
			Gout	-	1
			Chronic Rheumatism	-	12
CHRONIC DISEASES.			PUERPERAL DISEASES.		
Dyspnœa	-	10	Ephemera	-	3
Cough	-	12	Menorrhagia lochialis	-	3
Cough and Dyspnœa	-	14	Mastrodynia	-	5
Phthisis Pulmonalis	-	6	Rhagæ Papillæ	-	3
Hæmoptoe	-	4			
Ascites	-	3			
Anasarca	-	4			
Hydrothorax	-	2			
Hepatitis Chronica	-	3			
Cephalalgia	-	10			
Vertigo	-	2			
Hemicrania	-	3			
Ophthalmia	-	4			
Epistaxis	-	2			
Amennorrhœa	-	5			
Menorrhagia difficilis	-	3			
Chlorosis	-	4			
Enterodynia	-	3			
Diarrhœa	-	5			
			INFANTILE DISEASES.		
			Aphthæ	-	2
			Herpetic Eruptions	-	3
			Tinea	-	4
			Tabes Mesenterica	-	2
			Ophthalmia	-	2
			Hooping Cough	-	5

Although we have advanced beyond the period in which winterly diseases generally prevail, the weather still continuing very cold, we have had a large number of cases of catarrh, dyspnœ, cough, and rheumatism.

The instances of ophthalmia, which have lately occurred, have been uncommonly numerous. This may probably be attributed to the long continuance of east and north-east winds. This disease has been distinguished by ophthalmologists, according to the part of the eye which has been the seat of it, or according to the remote causes by which it has been produced. It has sometimes its seat in the membranes of the eye, when it has been denominated ophthalmia membranarum; when it has appeared chiefly on the edges of the eye-lids, it has been termed ophthalmia tarfi.

These two kinds are, however, very frequently connected. This disease often appears in connection with scrophula or syphilis, in which case it is very liable to occur on every slight occasion.

It has lately been produced in several instances by exposure to a cold air, after which has been observed a fulness of the vessels of the tunica

conjunctiva, accompanied with considerable pain, an effusion of tears, and intolerance of light. There is generally a discharge of an acrimonious fluid, which during the night closes the eyes, and renders some emollient application necessary for the more easy separation of the eye-lids.

This disease, though the symptoms at the first appearance may be very similar, admits of a great variety of treatment, depending on the general state of the constitution, the original cause, and varying circumstances of the case. These have been so accurately distinguished, and so judicious a mode of treatment has been recommended by Mr. Ware, in his different writings on the subject, that we cannot do better than direct the attention of the practitioner to this source of information.

*Diseases admitted as in and out-Patients of the Physicians of the Westminster Hospital, between the 20th of April and the 20th of May.*

	No. of Cases.		No. of Cases.
Typhus	11	Erysipelas	1
Tertian	1	Whooping Cough	1
Quotidian	1	Hæmoptoe	2
Scarlatina	1	Hysteria	2
Amenorrhoe	1	Itch	4
Ascites	1	Lichen	1
Asthma	5	Lumbago	1
Asthma	2	Leucorrhoea	2
Catarrh	1	Menorrhagia	1
Colic	1	Phthisis	3
Convulsions	1	Pleurisy	1
Cough	9	Rheumatism	14
Diarrhoea	4	Struma	3
Dyspepsia	4	Tinea	2
Enterodynia	2	Urticaria	2
Epistaxis	1		

*List of Diseases from the 20th of April to the 20th of May; being the Result of the Public and Private Practice of a Physician at the West End of the Town.*

FEBRILE DISEASES.		No. of Cases	
	No. of Cases.		
Catarrh	13	Slow Fever, and Hætic	9
Acute Rheumatism	5	Child-bed-fever	3
Whooping-cough	6	Febrile Diseases of Infants	9
Measles	5	Aphthous Sore-throat	3
Scarlatina	4	Hæmoptoe	1
Chicken-pox	1	Hæmatemesis	1
Contagious malignant Fever	3	Quotidian	1
		Tertian	1

CHRONIC

336 - *List of Deaths in London, for the last three Months.*

CHRONIC DISEASES.		No. of Cases.		No. of Cases.
Cough and Dyspnœ	-	36	Chlorosis, &c.	- 7
Pulmonary Consumption	-	7	Menorrhagia	- 5
Pleurodyne	-	4	Abortion	- 2
Chronic Rheumatism	-	15	Fluor albus	- 2
Asthma	-	21	Dysury and Gravel	- 3
Dropfy	-	7	Hæmorrhoids	- 2
Scrophula	-	5	Tabes Mesenterica	- 6
Rachitis	-	2	Scirrhus	- 4
Cephalæa	-	8	Tooth rash, &c.	- 6
Epilepsy	-	1	Itch and Prurigo	- 15
Vertigo	-	2	Lepra, and Scaly Tetter	- 5
Dyspepsia	-	10	Intertrigo	- 2
Pains of the Stomach and			Acne	- 5
Bowels	-	14	Nettle-rash	- 1
Diarrhœa	-	6	Purpura	- 2
Constipation	-	2	Erythema	- 1
			Porrigo	- 3

*The following List of Deaths is given by the Bills of Mortality, for the last three Months.*

Abcess	-	5	Jaundice	-	21
Abortive	-	10	Inflammation	-	194
Aged	-	439	Liver-grown	-	4
Apoplexy	-	32	Lunatic	-	32
Asthma	-	295	Measles	-	24
Bleeding	-	1	Miscarriage	-	1
Brain Fever	-	1	Mortification	-	43
Cancer	-	13	Palsy	-	19
Child-bed	-	46	Pleurisy	-	8
Consumption	-	1353	Rupture	-	3
Convulsions	-	1033	Small-Pox	-	410
Croup	-	4	Still-born	-	161
Dropfy	-	220	Stone	-	1
Fever	-	510	Suddenly	-	42
Gout	-	25	Teeth	-	108
Gravel	-	2	Thrush	-	6
Hooping-Cough	-	190	Water in the Head	-	15

According to this statement, if we could rely upon its accuracy, the total number of deaths in London, during the three spring months, amounted to 5271. Among these, no less than 1353, or upwards of one fourth part, died of consumption!—Supposing the population of the country to consist of ten millions of inhabitants, the thirtieth part of whom, in the order of things die annually, it would follow, that this exterminating disease cuts off more than 80,000 persons every year, in Great Britain alone; and these generally in the prime of life, when the community ought to be benefited by their mental and bodily exertions.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

I Hope the inclosed observations, on the subject of quackery, will not be considered as improper for insertion in the next Number of your valuable and truly interesting Medical Journal.

I am, GENTLEMEN,

With respect, yours, &c.

April 24<sup>th</sup>, 1799.

ALIQUIS.

*On Quackery, and the most effectual Means of checking its dangerous Progress.*

IT is not an easy matter to determine, what mode of administering medicine comes within the description of quackery; it can hardly be extended to all advertised remedies, because in that case, we must involve many prescriptions of eminent and regular physicians, who, actuated by various motives, have communicated their discoveries to mankind in this way; or the fruits of whose labours in the invention and application of new medicines, have found their way into the world by accidental means, without their concurrence.

There are also some medicines which have been reported to be so highly efficacious in the cure of particular disorders, that the legislature have thought fit to pay the inventors a reward for their ingenuity, and to publish the compositions of their nostrums for the benefit of mankind.

But we do not apprehend that either of those classes come properly under the denomination of quackery. Where the component parts of a medicine are publicly known, as well as the exact manner of preparing it, or where it comes forth sanctioned by the name of a regular physician, of known and approved abilities and integrity, however it is promulgated, or in whatever way the diseased are supplied with it; we do not apprehend, in either case, the medicine ought to be considered as quackery, or that its value is at all lessened by being vended at such a price as renders it attainable by the afflicted in every station of life, or degree of circumstances.\*

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\* Although we can by no means subscribe to the limited definition of quackery given by our correspondent, nor can it be disputed, that Nostrums in general, whether encouraged by the legislature, or puffed into notice under the sanction of a *quondam* eminent

But in my opinion, those are properly termed quack medicines, which are either advertised under fictitious names, or anonymously; those of which the composition is unknown, and the compounders and venders of which, are either ignorant pretenders to medical knowledge, or men in situations or professions in life totally remote from the profession of physic.

Under the burden of medicines thus obtruded on the world, do the public at this moment groan; and not only the newspapers and other periodical publications are filled with advertisements, recommending these doubtful and dreadful compounds, but every corner of the street is furnished with distributors, who load the passengers with pamphlets and hand-bills, promising, in the strongest terms of assertion, infallible relief to the diseased in all cases; and inviting them to swallow, for the cure of disorders so very different in their natures, as to make it obvious, on a moment's reflection, to all but the grossly ignorant, to whom, indeed, these delusive applications are particularly directed. Such is the credulity of mankind, that they suffer themselves to be duped by such barefaced artifices, and depending on a catalogue of pretended cures (into the truth of which they never give themselves the trouble to enquire), they add to the number of the deceived, and, without regard to habit, constitution, age, or sex, dose themselves with pills, potions, and powders, merely on the credit of their fabricated attestations; and at the expence of their health, and danger of their lives, minister to the fraud and avarice of those retailers of poison; the profits of some of whom are so extravagant, as to support them in enormous magnificent town-houses and country villas, splendid equipages, trains of servants, and all the appendages of rank and fortune: though some of these self-created doctors are selected from the lowest of the people; and we are well assured, that one in particular now flourishes in this metropolis, and sits at ease in his own carriage, who a very few years ago was employed in the stable, and driving one of those coaches which ply in the streets for the convenience of the public.

But these pests to society are not content with publishing their miserable insertions in the newspapers, &c. but volumes are daily obtruded on the public, which many of the nominal authors are unable to read; by these means they persuade the deluded multitude that the most dangerous diseases are removed, and the most desperate cases cured, by these balsams of life and health, each of which, according to the pompous accounts of those

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physician, are any thing short of a "burlesque on the common sense of mankind," yet, as the anonymous author of this paper has suggested some useful hints for the suppression of quack medicines; and as this is a subject so intimately connected with the advancement of the science, and the safety of the individual, we could not, consistently with our professions, refuse this ingenious letter a place in our Journal. W.

those hireling eulogists, possesses all the power of the whole of the materia medica, and is alone sufficient to prolong life to a period of years beyond that which has been allotted to the race of man; and we are sorry to add, that shops of reputation are to be found, base enough to participate in these practices of infamy, and to share in the price of their fellow-creatures' destruction.—That evils of such magnitude should be suffered to pass unnoticed, and that the lives of such numbers of useful members of society should be thus suffered to be trifled with and sported away, without the interposition of the legislature, in most other instances equally careful of property and life; that poison in a thousand forms should still be permitted without check or controul, and that no benevolent member of the great councils of the nation should turn his attention to an object of such importance, is sufficient to excite our wonder and astonishment; and still more surprising is it, that the learned body, to whom the practice of physic is legally committed, and whose abilities are as extensive as the powers with which they are invested, should suffer such enormities to proceed. By their intervention, either by an application to parliament to stop the progress of such alarming practices, or by exposing the compositions and effects of the several quack medicines offered to the public, detecting the falsity of the pretended cures performed by them, and exhibiting catalogues of the injuries sustained by those numerous individuals, whose lives have been destroyed or rendered comfortless by this unwarrantable traffic, the evil might be remedied.—Surely, the universal silence of the faculty on these concerns, seems to countenance an insinuation which we are well persuaded is unjust, "That the regular professors of physic are interested in the dissemination of these spurious nostrums, the suppression of which would lessen the progress of disease, and of course diminish the number of patients who are ultimately compelled to seek relief from them, for the disorders brought on by quacks, mountebanks, empirics, &c.

If we might venture to offer a few hints on a subject apparently of so much consequence, we would submit to the legislature the propriety of erecting a public board, composed of the most eminent physicians, for the examination, analyzation, and approbation, of every new medicine, before an advertisement should be admitted into any newspaper or other periodical publication, and before it should be vended in any manner whatever.

To this board those who had made any medical improvement should apply, and state, on oath, the ingredients and composition of the proposed medicine, and the disorders to which it is meant to be applied; and if the members of the board should think it may probably produce the proposed effects, they should immediately underwrite such opinion on the advertisements



tifements intended to be published, and under that sanction the medicine should be publicly sold.

That the same board should carefully examine into the truth of all cases and attestations of cures published in support of any advertised medicine, and in case any of them should be discovered to be fraudulently fabricated, to declare the same by public advertisement, in order to prevent the continuance of the imposition; and we may venture to assert, that the members of the College of Physicians would be happy to execute an office so essential to the public benefit, without the smallest view of private emolument.

But we are well aware, that the plan we have proposed is extremely imperfect, and the execution of it in its present form would be attended with many difficulties. We can only plead in excuse for offering it, our zeal, to remedy an increasing evil, and our hope, that our humble attempt may induce some much abler writer to suggest a plan, better calculated to answer the important end for which it is designed.

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*Practical Remarks on the Diseases which occurred on board the Astrea, &c. By STEWART HENDERSON.*

[Concluded from our last Number, pp. 236—238.]

EPIDEMIC CATARRH.

THIS catarrh, resembling the influenza, which was so prevalent in England and other parts of Europe in 1782, made its appearance on board the *Astrea* the 5th of October, 1789, when at anchor off Kingston: in the course of a few days there was hardly a man in the ship but was attacked in a greater or less degree; most of the squadron felt its influence, but it was observed to seize mostly those who had been longest on the station. The *Centurion* and *Blonde*, ships newly arrived from England, had hardly any taken ill. The people of the town of Kingston, especially the lower class of whites and negroes, who sleep in out-houses, were generally affected. The appearance of the disease at different periods pervaded the whole island, sometimes prevailing in one place a week before it was felt in another; as happened to the 10th regiment, stationed at Fort Augusta, which is only four or five miles from where the squadron lay.

The symptoms varied in different persons; in some they were complicated with the endemic remittent; in general they were seized suddenly with chilliness and shivering, succeeded by a hot fit, languor and lassitude; pain and stricture across the thorax, with some difficulty of breathing;

ing; anxiety, sickness, and violent pain in the head, particularly above the orbits; frequent sneezing, the membrana schneideriana much affected; heat and soreness in the throat, with frequent cough. Some complained of a violent pain in the loins, which was much increased upon motion; one had a bleeding from the nose; delirium appeared in some, but only in those who had catarrhal symptoms, complicated with the remittent fever; the tongue white, and in some yellow; the pulse quick and small; the skin dry; the belly, in general, costive. Though the pain of the breast and side was sometimes violent, yet the pulse was seldom hard; no mark of inflammatory diathesis so as to indicate bleeding; debility commenced with the disease and continued after the catarrhal symptoms were gone, requiring the use of bark and the most powerful cordials; relapses were frequent, from being exposed to the weather, but the symptoms were in a milder degree.

This disease appeared to me to be occasioned by the sudden transition of the weather. The preceding month had been uncommonly hot, such as had never been felt by the oldest inhabitant in Kingston: the thermometer in the day, being never below 90 in the shade. During this month, people were afraid to stir out; several from being exposed to the intense rays of the sun were seized with phrenzy, which in two instances, I was told, proved fatal. The sea breezes were pretty regular: but we had not the usual rains and squalls which distinguish this season, and characterize what are called the hurricane months; partial showers, indeed, fell in the mountains, but did not reach the vallies. In the first week of November the thermometer fell 10 degrees in the day, and experienced a much greater change in the night: the sea breezes left us; the air became so foggy as to obscure the solar rays; a great degree of dampness was felt, and in the night, a strong land wind blew from the mountains, carrying with it a sensible degree of moisture. Every one who was exposed to this air was suddenly attacked with the disease. All those men who slept upon deck without any covering, which many were induced to do from the great heat below, suffered from their imprudence; for they had the complaint in a more violent degree than the rest who were afterwards seized.

I remarked, that the men who slept below in the cable-tier were the last seized, and had the complaint in a slighter degree; but the symptoms not being so violent, might be owing to the pre-disposing cause being somewhat abated, on a change of the weather. For about the latter end of the month, the sea breezes returned, with squalls, which soon dispersed the surrounding vapours, and gave a brisk circulation to the stagnated air. With this change the disease disappeared.

The Centurion and Blonde not being affected, proved clearly that no contagion existed in the air. I imagine their exemption from it was owing to the constitutions of the men not having arrived at that degree of relaxation and irritability, which a continuance of some years in a hot climate never fails to produce, and renders the habit more susceptible of the sudden influence of cold, which appears to have been the sole cause of this epidemic catarrh.

In the beginning of the complaint, an emetic was generally given, which relieved the nausea and sickness, and produced some degree of perspiration. This was encouraged by keeping the patients in bed, and causing them to drink plentifully of warm sage-tea, barley-water, &c. From the number of the men confined below, as well as the nature of the epidemic, and state of the air, I thought it necessary to keep buckets of hot vinegar under their hammocks, to correct the stagnated air. Antimonials, with the tinct. opii, were administered; the vin. antimon. was what I in general used, thirty to forty drops four times a day, adding to each dose ten drops of the opium tincture; and by the assistance of the warm bath a plentiful perspiration was kept up. To relieve the cough, and promote expectoration, the sp. minder, with the oxymel scillit. were ordered. The tart. emetic, given so as not to produce full vomiting, afforded great relief to the febrile symptoms, by promoting perspiration, and removing the mucus accumulated in the bronchiæ. When the pain and stricture in the thorax were violent, blisters gave relief. Bark was given in those cases which partook of the remittent type; and, on account of the debility which commenced and continued with the disease, wine was often necessary. From the same cause, bleeding was never made use of on board the *Astrea*. Indeed, I found that the men from being so long exposed to the debilitating effects of a hot climate, bore evacuations very ill. These were the principal means we employed for the cure of this catarrh, and when unattended with pulmonary symptoms, it soon yielded to them. In those cases which terminated by expectoration, the debility was very great, requiring a nourishing diet, and plenty of good wines which was never spared on these occasions.

#### ULCERS.

Of ulcers, and the nature of the ulcerative process, much has been said of late by eminent medical characters. It is only my intention here to take notice of that ulcer to which seamen and soldiers are more particularly subject, from the nature and manner of their life. Next to fever and dysentery, this complaint proves the most destructive to British seamen and soldiers, and no surgical disorder has deprived his Majesty's service of so many men, as every experienced surgeon must have observed, who

who has attended our hospitals during war ; nor are there any cases more unfit for general hospitals on their present principle.

When I acted as surgeon to his Majesty's naval hospital at Antigua, in 1780, nearly one-third of the patients laboured under this complaint.— Being at that time a young surgeon, I was unwilling to run the risk of deviating from established authorities, and therefore pursued the plan pointed out by men of high repute in the profession. Our method of treatment then consisted of poultices, various ointments, and other relaxing applications, with a sparing use of tonics and stimulants; rest and confinement were strictly enjoined. I could not help lamenting the inefficacy of those remedies, when I saw so many fall victims to the disease, and others lose their limbs, by being obliged to undergo a painful and hazardous operation. Baffled in every attempt to heal these ulcers, I was under the necessity of having recourse to an operation, as the only chance of saving life.

Dr. YOUNG, physician to the hospital, Mr. WEIR, surgeon of the *Alcmena*, now physician to Lord ST. VINCENT's fleet, agreed with me in the necessity and propriety of performing the operation. We considered that it was only assisting nature, for she was endeavouring to get rid of a part which had become useless, and was contaminating the whole system. I was further encouraged by the anxiety of the patients to have it done ; and what gave me greater reason to expect success, was, that in a row of empty rooms appropriated for officers, I had the liberty of putting the men before the operation, where they would breathe pure wholesome air, which they had long been strangers to in the hospital. Fourteen underwent the operation, most of them below the knee, which I always prefer when the case will admit of it. Such was the advantage of their being removed from the noxious air of a crowded ward, that in a few days all their hectic symptoms left them ; appetite returned ; the stumps put on a very healthy appearance, and continued to do so, until the ulcer of the stump was contracted to about the size of a half-crown, when it seemed to be stationary, discharging a thin ichor. Though their appetites were good, and notwithstanding they had a nourishing diet, and good Madeira, and at the same time bark and other tonics, they did not appear to gain strength. From their pale and languid countenances, I judged that moderate exercise in the open air, in the morning and evening, with the use of the cold bath, which happened to be convenient, might have a good effect in restoring their general health. I immediately procured crutches for them, and had them plunged into the salt water every morning. The good effect was soon visible, not only in their countenances, but the fore put on a fine, flrid,

florid, and healthy look, discharging good pus, and contracted daily. They all recovered, except one man, a landman, who was a very irregular liver, and who, notwithstanding that every precaution was taken to prevent it, procured and drank immoderately of new rum; part of a bottle of this poisonous liquor being found in his bed when he died.

The bad effect of foul air on ulcers I had an opportunity of witnessing at the Cape of Good Hope. A great number of the seamen and soldiers had ulcers, occasioned by the immoderate use of ardent spirits, and their not using sufficient vegetable aliment. The climate itself is remarked for its salubrity, and the British army for a considerable time past have been in a state of health, unknown in any other part of the world. Storehouses appropriated for the reception of the sick, were then extremely crowded, and the air so vitiated, that the slightest case degenerated into the most malignant, in the course of a few days. Notwithstanding every effort of very able surgeons, numbers died, and many lost their limbs; none, I believe, recovered from the operation, until they thought of removing them to separate apartments, which had the same good effects as at Antigua.

From what I have observed of the bad effect of crowding patients with ulcers, fever, or dysentery, it appears, that the best and most powerful remedies will fail, when the patients are deprived of that great pabulum of life, pure atmospheric air, on which the preservation and restoration of health so much depend. Three feet, the greatest space generally allowed between the beds, is not sufficient, in wards containing acute infectious diseases and ulcers; the factor arising from one large ulcer will contaminate a whole ward, and render the air noxious to animal life.

On finding such beneficial effects from exercise, pure air and cold bathing, in accelerating the healing of the stumps, I was glad to try what these combined would effect in the cure of the ulcers.

The ulcers to which seamen and soldiers are particularly subject, are brought on, as I have before remarked, from their not using sufficient vegetable aliment, joined to irregularities, especially the abuse of spirits, heat and moisture, and exposure to impure air. In a constitution previously prepared by such debilitating powers, we can easily conceive, that the smallest scratch will degenerate into an ulcer, which, when below the knee, becomes very difficult of cure, often baffling every attempt of the healing art. This arises from the state of the fluids, and general debility, but particularly in the extreme parts, where there is a greater deficiency of vital principle, even in health. Perhaps the tendinous structure of the parts, and their depending situation, may assist in retarding the cure of ulcers situated upon the lower extremities.

*Appearance*

*Appearance of the Ulcer.*

The ulcer generally makes its appearance on the fore or inner part of the leg, near the ankle, and discharges a thin acrimonious matter, excoriating the surrounding parts. On neglect or improper treatment, it enlarges daily; the discharge becoming more and more acrid, attended with a putrid fætor; fungous excrescences begin to rise; the limb becomes œdematous, and very painful. Sometimes, on the least touch, or depending position, a hæmorrhage takes place; the bones become carious; putrid sloughs are cast off daily; and, from the constant irritation, the patient is kept in continual pain; has restless nights; and a hectic fever with colliquative sweats succeed. In this state, if the operation be not soon performed, a diarrhœa generally comes on, which in a few days closes the scene.

The progress of these symptoms will depend more or less on the constitution of the patient, the putrid diathesis in the system, exposure to miasmata, and in general to all the predisposing causes. In our expedition to St. Juan's, during the last war, such was the state of the air at that place, as I was informed by a surgeon in actual service there, that the slightest wound on the lower extremities degenerated into the worst symptoms I have described of this ulcer, in the course of three days, and carried off the patient in spite of the most powerful antiseptics.

*Cure of the Ulcer.*

In the cure of the ulcer, I have found that all relaxing and emollient applications are improper, unless when pain and inflammation require their use: when these symptoms are removed, they should be laid aside. The external applications, which in a great number of cases have succeeded with me, were warm and stimulant, increasing the action of the extreme vessels, and restoring the parts to their proper tone. With this view, I used the hydrargyr. nitrat. rubr. in powder, and sometimes in the form of ointment, or the solution of arg. nitrat. I often found it necessary to vary those escharotics; or leave them off when the discharge was copious, and apply dry lint, with slips of cerate to defend the edges; and over that a compress of linen, wet in a solution of sacchar. saturn. with the addition of a little camphorated spirit, supported by a roller of thin flannel or cotton, which was moistened in camphorated vinegar, renewed two or three times a day, and continued from the extremity of the foot to a little below the knee, not to prevent the motion of the joint, nor the action of the muscles. This enabled the patient to use moderate exercise, which I strictly ordered as soon as the pain and inflammation abated. This, with the daily use of the cold salt-water

bath greatly accelerated the healing process, and assisted in restoring the general health. When the discharge was foetid, lint dipped in tincture of myrrh, bark, or carrot poultices, corrected the foetor, and lime-juice proved a good detergent.

While these external means were employed, internal remedies were at the same time administered, with two intentions; first, to correct the putrid diathesis, and produce good juices; secondly, to brace and strengthen the system.

To answer the first, the bark was given in copious doses; lime-juice, and a large proportion of vegetable aliment, with plenty of good wine; while evacuations, which might lessen the vital principle, as well as debilitating causes, were carefully avoided. The second was effected by preparations of steel, assisted by exercise, and the cold-bath: but what I conceived to be the most efficacious, was a very liberal allowance of pure atmospheric air, which I considered to be of greater importance than all the other remedies; for, deprived of that, all the rest would effect no salutary purpose. The incalculable mischief which the want of that sovereign remedy has produced in our hospitals is well known, and experienced by every medical man of observation.

In concluding these few remarks, I am sensible that the success we met with did not depend on any particular mode of treatment, differing from the common practice; but was more owing to having it in our power to attack disease on its first commencement, before morbid movements had made much impression; thereby affording us an opportunity of cutting short the disease, or at least obviating its danger. At the same time, cleanliness and wholesome air were particularly attended to, and every cause removed which was likely to aggravate symptoms, or counteract the effect of medicine; while Captain RAINIER, very humanely, allowed the sick wine and fresh diet from his table. Without those aids, all our medicines, I fear, would have availed but little.

STEWART HENDERSON.

*No. 7, Lancaster-Court, Strand,  
March 16th, 1799.*

A TABLE,

A TABLE, shewing the different Diseases and Casualties which occurred on board his Majesty's Ship *Astrea*, from her leaving England for the Jamaica Station, in January, 1787, to her Arrival at Chat-ham, in June, 1790; comprehending a Period of three Years and six Months.

DISEASES.				Epidemic catarrh				50
Pulmonic complaints	-	5	Ulcers	-	-	12		
Rheumatism	-	2	Contusions and slight wounds	-	-	372		
Remittent fever	-	68	Fractures	-	-	6		
Intermittent fever	-	52						
Slight fever, the effect of cold,			Number of Patients				741	
or irregularities	-	97						
Dysentery	-	7	Sent to the hospital	-	-	111		
Diarrhoea	-	25	Invalided to England	-	-	11		
Hepatic complaints	-	15	Died in hospital	-	-	8		
Spasmodic affections	-	31	Died on board	-	-	none		
Scurvy	-	4						
				Years.	Months.	Days.		
At Sea, or in Ports where no sick were landed	-	1	2	26				
At Port-Royal	-	1	4	5				
In Kingston Harbour	-	0	9	4				
Ports in England	-	0	2	0				

Of the deaths in the hospital, three were from accidents, and one a marine who was ill of a pulmonary complaint, six months before he left England; so that four can only be said to have died from diseases of the climate.

Of the eleven invalided, or sent to England for change of climate, five were received on board at Jamaica, labouring under chronic complaints, contracted on shore:—Capt. Rainier very humanely received them for that benevolent purpose. From the nature of their disorders, they had no chance of recovering while they remained in the country.

### *To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

AS there is among practitioners considerable difference in opinion, with respect to the nature and causes of dysentery, and great variety in its appearance, as well as treatment in different climates; and especially as the method so successfully employed throughout the East-Indies, of giving mercury in the cure of this disease, may not perhaps be generally known, but which, however, in obstinate cases may be more frequently used



used with advantage in other countries also.—I have ventured to transmit you some observations I have had occasion to make in this disease; in which I have also committed some thoughts on the nature of contagion in general; and, should these be found not altogether unworthy of your considerations, I hope you will do me the honour of inserting them in your useful Journal.—As the cure of dysentery seems now in general to be trusted almost entirely to the use of proper laxatives, I shall here forbear making any observations on the treatment of dysentery, which I have had frequent opportunities of seeing in this country, but confine myself chiefly to the disease as it appeared in a detachment of an European regiment, on their arrival in the East-Indies, in 1796. To this I shall add some account of the appearances on the dissection of those who died of the complaint.

I am, GENTLEMEN, with the greatest respect,

Your most obedient servant,

*No. 26, Northumberland-street,  
30th April, 1799.*

J. CHRISTIE, 27th Foot.

In May, 1796, a detachment of which I had the charge, consisting of 320 men, of his Majesty's nineteenth regiment of foot, were embarked at Portsmouth for the East-Indies; the greater part of those soldiers were young men under the age of twenty-one, all were healthy, and few had ever been in a hot climate.

After a remarkably fine passage from England, we arrived at Bombay in September following, two men only having been buried during the passage, one of whom died of ileus, the other of tetanus, arising from a compound fracture, and for which opium in large doses, together with calomel, were unsuccessfully employed; two men were landed ill of flux, and several had symptoms of scurvy, of which they got rapidly clear by proper diet, on their arrival at Bombay.

This detachment on landing, along with a company consisting of an hundred men of the thirty-third regiment, were put into clean, spacious, and airy barracks, situated on a small island, or rather peninsula, almost entirely surrounded by the sea, and distant a mile from Bombay, to which, at low water, there is a communication for foot passengers.

The men were supplied with bedding and light cloathing fit for the climate, and more than usual care and attention were paid by the commanding officer to the diet, regularity, and discipline; whatever could tend to preserve the health and comfort of this detachment, now consisting of upwards of 400, was enforced by the strictest orders: notwithstanding all which, soon after our arrival, in the beginning of September, at the break-  
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ing up of the monsoon on the coast of Malabar, symptoms of dysentery, chiefly among the youngest and stoutest, became very general.

The disease attacked the person with the usual symptoms of frequent stools and severe griping: these stools, small in quantity, having a scybulous appearance, and constantly mixed with blood. Costiveness, though very rarely, preceded the disease. The griping, tenesmus, and purging, were always accompanied with fever, apparently inflammatory. The skin was hot and parched, thirst great, pulse frequent, strong and hard, generally beating from 100 to 120 strokes in the minute, but with that peculiar smallness or wiry feel which characterises visceral from other inflammatory affections; and although this disease is in general supposed to be kept up by spasmodic derangement, I would say, from what I have observed in practice, and particularly from the appearances on dissection, that this disease is generally, and when violent, constantly, ushered in with more or less inflammatory action. That type was perhaps the more remarkably observed at this period, from the disease having attacked chiefly the young and plethoric, and those of the most robust constitutions.

Soon after the appearance of the disease, generally about the third or fourth day, and always, when violent, the patient complained of a scalding, and difficulty in voiding urine. In some, this continued throughout the disease, with little inconvenience; in others, those symptoms increased so much, that a complete suppression of urine, requiring the use of the catheter, took place. In general, the violence of the stranguy was the surest sign of that of the disease, and few recovered wherein this symptom was obstinate.\*

The tenesmus was uncommonly distressing, and so little was voided, that the patient had generally upwards of thirty stools in the course of a day, and in some, two or three in one hour.

Although the fever at first was evidently of inflammatory tendency, yet it was soon followed by great prostration of strength, accompanied with early marks of general putrescency.

In most of the more violent cases, there was great oppression at the præcordia,

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\* Some have supposed dysuria dysenterica to arise in consequence of a portion of the rectum protruding by the severe tenesmus, and thus carrying along with it, in some measure, the fundus of the bladder, to which it is connected by cellular substance. In this manner they suppose the mouth of the bladder is mechanically elevated and moved from the direct entrance of the urethra, occasioning stranguy.—It appears probable to me, however, that some degree of inflammation is communicated from the rectum to the neck of the bladder, and the urine itself appears also to be more than usually acrimonious, and will thereby give rise to the symptom mentioned.

præcordia, attended by nausea and vomiting ; in one or two instances there was a voracious appetite.

The disease seldom assumed the appearance of what writers have called *mucosus*, or *dysentery alba* : when it appeared in this form, it was generally a mark of returning health.

At times, the matter voided appeared to be pure blood, but generally the stools appeared to be mixed with a purulent-like matter, or a kind of fæces, and this, from its acrimony, produced great distress, especially the giving rise to very troublesome sores around the anus : the stools had always an unusually fætid odour, and indeed the smell of the whole body was remarkably disagreeable. Worms of the lumbrical kind were sometimes voided ; and, in one instance, a large one crawled out by the mouth. In the stools there was frequently observed a suety, or fatty-like appearance, but most commonly films and portions of a membranous substance were voided ; and, when the disease was of long continuance, especially, it was astonishing how large the portions of membrane were that came away in this manner.—I have seen pieces at least two or three feet in length, sometimes cylindrical, resembling a small intestine. It appeared to me, as if the inner membrane of the gut had sloughed off : but I must here acknowledge that I did not examine this appearance with that minuteness, to ascertain whether it was really portions of the villous coat, or merely coagulable lymph, poured out from the abraded surface of the intestine, and assuming the appearance mentioned. I know that small portions of the inner coat of the intestines are occasionally voided in dysentery in this manner ; but as this is doubted by some, and denied by others, I have now only to regret not having paid more attention to this matter, for in India particularly, such appearances are by no means unfrequent. It is, however, I think most probable, that it is coagulable lymph chiefly, for it seemed to retard but little the recovery of the patient.

In many instances, the febrile state was moderate, and sometimes entirely disappeared, while the proper dysenteric symptoms continued ; at other times the fever was kept up, and not unfrequently accompanied with a dull, heavy kind of pain in the right hypochondrium, increasing on pressure, and extending towards the clavicle, plainly shewing the disease to be accompanied with a disordered state of the liver ; and in such, a diarrhœa was often observed to continue long after the other dysenteric symptoms disappeared.

By some it has been doubted whether the pain referred to the shoulder and clavicle, so constant in hepatitis, and so frequent in dysentery, should be ascribed to nervous sympathy.—I should suppose there can be little doubt

doubt of this being a nervous affection; and the peculiar feel may be occasioned by the mere bulk and weight acquired by the liver, in its diseased state; for the pains are sometimes distinctly referred to the side of the neck, though most commonly to the clavicle, or tip of the shoulder; but we know a considerable branch of the *par vagum*, on entering the thorax, pretty constantly turns round the subclavian artery, and which sends some branches to those parts complained of in liver diseases. If the stomach, intestines, or pancreas, which are also supplied with nerves from the *par vagum* and the intercostals, were, during their diseased changes, to acquire a proportionate enlargement and weight, as in the liver, it is probable we should, on mere mechanical principles, perceive similar pains in those viscera.

The dysentery, in most cases, began gradually to become less violent in ten or twelve days from the first attack, and would entirely disappear about the fourteenth or fifteenth. In others, all the symptoms would continue with great severity for weeks together; petechiæ would appear on the skin, and the patient becoming weaker and weaker, would sink under all the appearances of putrid fever. In one or two instances, where the inflammatory symptoms ran unusually high, and accompanied with painful and obstinate strangury, the patients were carried off delirious, on the fourth or fifth day of the disease.

Those who had relapses, had the disease most severely; and if the attacks were more than once repeated, few entirely recovered; most of those had some affection of the liver: and here it may be proper to remark, that this organ may be sometimes materially changed, nay, even matter formed in its substance, without ever producing much pain, or shewing any evident external mark.

**CAUSES.**—It has been generally alleged and admitted, that dysentery arises from the action of a specific contagion; of the constant presence of which, however, I have long had my doubts, and especially in those cases which were under my care at Bombay. In all, I could trace the disease to have arisen either after intemperance, great fatigue, exposure to, or sleeping in cold wet night air, especially when in a state of intoxication: whether any of these causes, separately or combined, can ever alone produce the disease, or whether they act merely as debilitating causes, thereby favouring the action of the contagion, I cannot take upon me to determine; although, for the reasons already mentioned—from its seldom attacking the temperate and well clothed, and especially from never having seen the disease under common circumstances, distinctly communicated from one person to another—I believe the former is in most instances

instances more probable. At Bombay, the bodies of many were in a very putrescent state; the feculent matter of all had an unusually offensive smell, and yet the disease never shewed any signs of a contagious nature.

In Europe, in crowded transports, and in some hospitals, I have observed dysentery assume a contagious appearance: there, however, it seemed to be from accidental circumstances; as the impurity of very confined air—want of cleanliness—want of proper rest—from the bad smell of the patients already labouring under the disease—and especially from the highly offensive feculent matter, acting as a stimulus on the alimentary canal; such circumstances, particularly in hot climates, and acting on exhausted and intemperate constitutions, most commonly seem to be the sole cause of genuine dysentery. In hot climates, particularly in intemperate men, where we find the circulation always considerably accelerated, and debility induced, may not an accumulation of blood be thereby produced in the mesenteric veins, unaided by valves, and otherwise little supported, thus occasion some disorder in the bowels; and as the great gut is found principally to be the seat of the disease, may not this hypothesis be especially applicable to it, from the small number of its absorbents?—The more highly acrid fæces, however, in the colon, appears to be the principal reason of its suffering most materially.

Among accidental causes, independent of contagion, producing dysentery, we may mention an instance stated by Mons. LASSONNE, of the Royal Society of Medicine, at Paris, where, in the year 1749, a disease raged among cattle, that died in great numbers, many of whom were buried carelessly near the house of L'Infant Jesus, where numbers of the women in it became affected with dysentery, and other putrid diseases, from the effluvia acting as a stimulus on the alimentary canal.

At Bombay, those addicted to intoxication with toddy \* and arrack, were so generally observed to be attacked with dysentery, that any person

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\* Toddy is the common name in India for a liquor obtained from the cocoa-nut tree. It is not that mild, sweetish, watery fluid, found in the inside of the nut, but a juice, collected by placing a jar, or kind of receiver, at the top of the tree, around the cut extremity of a peduncle, which produces a bunch of cocoa-nuts. The juice which would have been sent to nourish a bunch of these nuts, is thus collected into the receiver, and when taken down in the mornings, is a pleasantly mild sweet liquor, somewhat resembling new ale; and is in this state frequently taken by the East Indians as a pleasant morning draught. It is generally laxative, but after the heat of the day it ferments, and then becomes very intoxicating, and disposed to affect particularly the alimentary canal. In its fermenting state, the soldiers are very fond of it. From this liquor the best arrack is distilled; and these two liquors are the great bane of the European in India.

son, not at all conversant in medicine, would easily fortell to a certainty, that those who were reeling about in the sun under the influence of this liquor, would be laid up next day with flux. The toddy alone, from its affecting peculiarly the stomach and bowels, seems to me sufficient, in many instances, to produce the disease; but this, as well as all intoxicating liquors, by the general excitement produced in the system, appears to affect and change the biliary secretion, thus acquiring a higher degree of acrimony, and perhaps in this way affits in aggravating or keeping up the disease.

That great fatigue under the exposure of a burning sun—the drinking large draughts of cold or bad water, when the body is much heated—sleeping (particularly in a state of intoxication) in night or damp air, are, indeed, not only capable of producing this disease, and inflammatory affections and fever, but, in some instances, actually to kill, we have many and various well-authenticated accounts; especially in Dr. CURRIE'S 'Medical Reports,' in his quotation from Quintus Curtius, wherein the army of Alexander the Great suffered so much in passing through a very sterile, sandy country, destitute of water, but which (after long thirst and great fatigue) being obtained, the soldiers drank so greedily, that many died in consequence almost instantly.

About the year 1780, at the time military operations were carrying on in India against Hyder Ally and the French, when some Highland regiments were sent to that quarter of the world, we find several very striking and melancholy examples of the effects of great heat and fatigue on European constitutions: the 72d regiment in particular, soon after their arrival in India, in one march, left behind them two hundred men; many of these expired almost instantly, through mere oppression; the greater number of the rest died of fluxes, and fever in consequence.

In June 1794, at the time I accompanied the army under the command of Earl MOIRA, which disembarked at Ostend, for the purpose of forming a junction with that under the command of his Royal Highness the Duke of YORK, in Flanders, we had excessively long and fatiguing marches between Ostend and Ghent. The weather was unusually sultry;—several of the soldiers then dropped down in a state of insensibility, or coma—others were seized with purely apoplectic symptoms—and all were remarkably relieved by means of blood-letting.

Of the effects of such causes, I saw a still more striking and melancholy example in India, 1797; where an European regiment, little habituated to the climate,\* but very much addicted to drunkenness, and quartered

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\* It has been generally supposed to be a part of a commanding officer's duty, gradually

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quartered in a station where arrack was sold remarkably cheap—the men, after a night's debauch, were taken out in the morning to be marched a few miles to sober their senses, as it was called. This was *certainly* necessary; for before leaving the parade, many were yet reeling. They were marched a few miles—the sun rose—the men lagged—many dropped—six were brought in dead—not one fourth of the regiment kept together to the fort—above a hundred were taken to the regimental hospital—and several died in consequence of being attacked with fever and fluxes. The lives of many were saved by the use of blood-letting, from being apparently attacked with phrenitis: and this circumstance calls strongly back to my recollection, the laxity of medical discipline which I observed at that time, in that part of the world. Under no circumstances, in my opinion, is the presence of the medical man more indispensably necessary, than when his regiment is on the march; no pretence whatever should at such times authorize his absence; in no climate, perhaps, in such cases may a surgeon be more likely to be of real benefit.—The medical allowances granted by the Hon. East-India Company to European regiments are not only remarkably liberal, but in fact unnecessarily extravagant: the war allowance for medical attendance for a thousand men exceeds five thousand pounds a year! and yet, strange to tell, there was not one medical man, black or white, to be seen the whole time the regiment was on its march, at the time the men were falling every minute. If fifty guineas a month are allowed for doolies\* on such occasions, I do not see why they should be withheld. If a surgeon is allowed besides, 300 guineas a month, for attending on the sick, I do not conceive what indulgence he can claim for being absent. The mind of man becomes in a variety of ways relaxed, and enervated, and peevish, and fond of sensual gratifications in an Indian climate. *We* know female charms, even in tawny Hindoo colours, in the cool mornings, on the shores of Coromandel, or the plains at Columbo, are very fascinating, very enticing; but surely the soft murmurs of languishment, or the toilsome pleasures of private duty, should never interfere with that duty which is indeed of an important nature—that duty where the *lives* of our fellow creatures are at stake, and in our hands!

From these instances, and a number of others which might be mentioned, we find a variety of diseases brought on, seemingly by the same causes,

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ally to season his men to the climate. Youthful European constitutions will not bear the fatigues of drilling and marching, till they are accustomed to the climate.

\* Doolies are a kind of palanquin or couch, carried by two or more men, in the rear of regiments, while on fatiguing marches, for conveying those men who happen to be taken ill.

causes, namely, excessive fatigue, with great heat, occasioning fever, dysentery, phrenitis, hepatitis, and apoplexy. Is it probable, that in the two former there was the action of a peculiar contagion? Or, are we not rather to suppose the same external causes produced all the different diseases?

The nature of all contagions seems to be but little understood, and what is frequently said on the subject appears to me to be involved in much obscurity; but the bodies of men, placed in certain situations and circumstances, and vegetable matter undergoing certain changes, appear to be capable of generating certain morbid poisons, occasioning certain specific diseases, and at times, as I think, without any of the parent poison (if the expression will be allowed), being primarily present. Contagious fevers and fluxes, appearing frequently in crowded situations, and particularly the manner in which the yellow fever broke out in America, seem to favour this opinion; while I think it true, that contagions may be evolved from accidental circumstances, I think it also not improbable, that all morbid poisons may at first have arisen in this manner, and that all may exist in effluvia, or a gaseous state only; and though it appears likely that some, as that of syphilis, or hydrophobia, &c. are communicated in a palpable or visible form, others, as that of the small-pox, exist only in the gaseous state, involved and communicated by the medium of different vehicles, namely, the air and purulent matter, and thus giving rise to the disease as it appears in the natural and inoculated way. When we speak of the variolous poison being communicated in the palpable form, and in the state of effluvia, it conveys to our mind, as if there was some difference both in the form and nature of the contagion; and it is said, when the poison is communicated in the state of effluvia by the air, or where the disease appears in the natural way, the symptoms of the small-pox are longer in appearing. This is certainly true, but may not the difference arise from the manner in which the contagion is applied? When the disease arises in the natural way, I would say, the symptoms are longer in appearing, because then the poison is most probably taken in by the lungs or skin, and there, or about the throat, meeting and blending with mucous matter on a healthy surface, it is for some time prevented from being absorbed, and shewing its effects on the constitution; while the poison, as it is communicated through the medium of pus, and by the puncture of the lancet, immediately applied to the action of the absorbent, its effects are thus more early produced. Some years ago I remarked the following fact:—A child with a sore, in consequence of inflammation on one of the tonsils, was unguardedly taken into a house where several patients were labouring under natural small-pox. The symptoms of the small-pox began to appear in the child in nine days thereafter. Here then  
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we find the disease appearing in the usual time of inoculation. Was this in consequence of the poison being applied by the atmosphere to an actively absorbing surface—the sore in the throat? Or had the child received the infection before entering the house where the disease was? Certain it is, however, the healing of the sore on the tonsil was arrested, became more inflamed and larger during the disease, which, upon the whole, was mild. I consider the difference of the violence of the small-pox to arise chiefly from the quantity of the poison thrown into the system: perhaps too, its being involved in that bland matter, pus, its virulence may in some measure be diminished; and why inoculation should sometimes produce a violent disease, may arise from peculiarity of constitution, heat of the air, and other circumstances. I cannot suppose the variolous matter can be at all compared to a ferment, for then inoculation should, in every instance, be attended with as violent a disease as that arising in the common way. The original quantity alone introduced into the system, appears to be evolved and set into activity by the heat in the fluids of our body, and the poison may not have the power of generating more, until pus begin to be formed in the pustules;—analogous in some way, perhaps, to what we observe in various substances, particularly in manganese, which, when exposed to considerable heat, gives out great quantities of oxygen gas, and after being entirely robbed of it, will again, on exposure to the air, charge itself with the same matter. In some parts of Scotland they have a custom of taking the variolous matter from the pustule when beginning to form, and they think this in general produces a milder disease.

(To be continued in our next Number.)

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*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

IF the following communication accords with the plan of "*The Medical and Physical Journal*," and you think it worth inserting, your notice of it will much oblige

Your's,

JOHN PROCTOR, Jun.

THE *unguentum hydrargyri* being a medicine much used, and the preparation of it rather troublesome, several expedients have been tried to facilitate the process; most of which are, however, more or less exceptionable, either on account of injuring the colour of the ointment, giving it a bad smell, or of being productive of disagreeable effects in the using of it: such

such are the ol. sulphurat. the turpentine, &c. An improvement is noticed in No. 6, of the "*Phil. Mag.* which is the addition of a very minute portion of flor. sulph. (sulph. sublimat.) which I find, upon trial, extinguishes the quicksilver very readily, but the ointment was of a bad colour; and a larger quantity of sulphur would probably make it almost black. I was led to try a little empyreumatic, or rancid fat, from the hint given in the following note in "*Fourcroy's Chemistry*," vol. ii. page 248, first edition, and found it answer beyond any thing I had ever used before for this purpose. It not only combines in a very short time with the quicksilver, but the colour of the ointment is equal, if not superior, to any that can be made with the purest fat without this addition. "In this ointment, the particles of the mercury do not merely seem to be distributed and interspersed among the particles of the fat, without any adherence or chemical union; on the contrary, the oily matter of mercurial ointment very quickly becomes rancid; and we know that rancidity, or incipient acidification, is always the consequence of the combination of oil with some other substance (now known to be oxygen, which it seems disposed to absorb more quickly by being united with a metallic substance). When the ointment is old, if we rub a portion of it between two bits of paper, the whole of the oil is absorbed, without leaving any globules of mercury visible behind it: but when we treat mercurial ointment, recently prepared in the same manner, we can very readily perceive a great number of metallic particles quite distinct. M. Beaumé took equal quantities of mercurial ointment; one of which was newly made, and the other become slightly rancid by keeping. He kept both of them in a state of liquefaction during eight days, in a degree of heat much below what could possibly decompose the fat. The newly-made ointment allowed three drachms of mercury to separate; the other, which was rancid, only one drachm and a half. All these observations do not allow us to doubt of the reality of the combination; they pointedly prove, that what we call the extinction of mercury in fat, is not purely the effect of mechanical division, since those two substances exert a slow spontaneous action upon one another, from which a more intimate union at length results. This is much confirmed, by observing the difference in colour and consistence between old and new ointment. New made ointment is of a very light colour, and extremely soft; while what has been kept for some time is much darker in colour, and much firmer in consistence: a sufficient proof of some change in the intimacy of their union. We are in the next place to enquire in what state the mercury unites with the fat, whether in form of a metal, or in form of a calx (oxyd).

"When old mercurial ointment is converted into a saponaceous compound by the addition of caustic alkali, there is always a quantity of fluid mercury

mercury separated from the mixture, the fat forsaking the mercury to unite with the alkali. Mercurial ointment is also decomposed by the action of ether upon it. When a small quantity of good mercurial ointment is put into a flask, which is two thirds full of ether and distilled water, and the mixture frequently shaken, the mercury soon begins to precipitate, carrying a small portion of fat along with it, which gives the mercury the appearance of a calx; but this fat soon disappears, and the mercury unites in the form of metallic globules, by simply drying it upon bibulous paper. By this analysis, we collect almost the whole of the mercury in a fluid state. In reviewing all these facts carefully, it seems probable, that the mode in which mercury combines with fat, more resembles the amalgamation of the metals with mercury, than their dissolution in acids, as the mercury is taken up in a metallic state, and not calcined (oxydated); the fatty matter serving the purpose of a solvent to the mercury in the preparation of mercurial ointment, in the same way that mercury itself serves the purpose of a solvent to the other metals, in the combination of the different amalgams."

I have copied the whole of this note, for the purpose of introducing some remarks upon it, which may perhaps explain more clearly the nature of this combination. I consider mercury to be simply mechanically divided by being triturated (till totally extinguished) in *pure sweet* fat; for upon rubbing the mixture upon the surface of any body which will either absorb the fat, or allow it space to be diffused upon, the mercury presently re-unites into small globules, as in its original state; and this happens from the connection between it and the dividing matter (fat) being destroyed. But when the ointment has been kept for some time, no such effect takes place, because the union becomes more intimate in consequence of the fat undergoing a change, by which it really does dissolve part, and in time, the whole of the mercury, and this change is no other than a gradual acidification, which it seems more readily to undergo from its combination with the mercury, by the absorption of oxygen from the atmosphere. The smell, which would betray its rancidity, or acidification, cannot be perceived till all the mercury is combined with the sebatic acid, when the superabundant quantity of fat, having no metal to neutralize, or rather to saturate its acid, will of course become sensible to the smell. As a proof of this, old mercurial ointment will readily take a considerable addition of fresh mercury, and in this way I at once prepare the ung. hydrarg. fort. by adding a proportionable quantity of mercury to a weaker ointment, consisting of one part of the metal to four of fat.

Led by this consideration of the nature of mercurial ointment, I found, upon trial, that a small portion of rancid fat extinguished a large one of quicksilver,

quick-silver, without communicating any disagreeable smell to the ointment when made. Should the fat be any way stiff or hard, it may be softened with a little oil of the same nature. Train-oil answers very well; as it spontaneously melts from the blubber, before it has undergone any change from heat, it is quite sweet, and free from smell; perhaps the large quantity of animal mucilage that is combined with it, may hasten its change in the ordinary temperature of our climate in summer; but, as in the case of other animal fats, its smell is quite destroyed, when combined with a metal. The cause of the rancidity of oil, may furnish some hints for their edulcoration; but, besides neutralizing and wasting their disengaged acid, it is necessary to separate the mucilage which is combined with them, either by pressure, or in the process of obtaining them by boiling, and which is deposited from several in considerable quantity, on standing at rest for some time. What is the precise difference between the mucilage of animal and vegetable oils; and in what degree do they contribute to accelerate the rancidity or putrescency of these oils?—The first of these states I consider to be owing to the absorption of oxygen, and the other to the disengagement of volatile alkali.

On the principles of the foregoing theory, I have tried with equal success the effects of rancid vegetable oil, making the emplastr. litharg. and have found the process much shortened when I have used this kind of oil, and the plaster, when made, equally good, if not better, than that made with sweet oil. Upon the whole, I consider the mercurial ointment to be a true sebat of mercury, combined with a more or less considerable portion of *uncombined* fat, according to the length of time it as been kept. The experiment with ether is nearly similar to the mixture of any other metal dissolved in an acid with this liquor. The solution of gold in aqua regia, and the tinct. ferri. mur. when mixed with ether, exhibit nearly the same phenomenon, viz. the reduction of the oxyd, by the abstraction of its oxygen.

It is far from being consistent with a true knowledge of chemistry, to compare the combination of mercury with fat to an amalgam; there is not the most distant analogy between these two compounds. Were I to draw a comparison between a mixture of mercury with other metals, and any other mixture resembling it, I would beg leave to mention that of wax, resin, and oil, which agrees exactly with it, as to its state, though it differs materially from it in the nature of its component parts. Mercury is in the one compound exactly what the oil is in the other; with respect to solidity, they differ in nothing from the other ingredients of their respective combinations, but in being fluid at a lower temperature,  
or

or containing a greater quantity of latent heat, a portion of which they yield to the other parts of the composition, and so form a mass of an homogeneous consistence and appearance. The similarity is rendered still more conformable, if we suddenly cool a mixture of the unctuous substances, when each of them will be distinctly perceptible, by the difference of consistence.

Other chemical substances are capable of producing their effects in the system by absorption, when externally applied, as well as mercury : arsenic and tartarized antimony have furnished several instances of this mode of action.

*A Comparative View of the Modern Medical Theories, and their Agreement with Practical Facts and Observations.*

By N. P. GILBERT.

[A Memoir read at the Meeting of the Medical Society of Paris, Dec. 12, 1798.]

IF it be true that health is the first of blessings, the art of preserving it, and restoring it when impaired by disease, is undoubtedly the most useful of arts. This may be defined the science of observation, and that of availing ourselves of favourable opportunities in regulating the functions of the human body. Since the progress of the *curative art* is directed by this double guide ; since the knowledge of past ages is not lost to the present ; its laws are clear, its precepts easy to be comprehended, and their application often successful. If we consult the annals of the infancy of science, we shall find that the first physician was instinct, and the first elements of medicine were the lessons of nature, gradually strengthened by those of experience. It is impossible to reflect on the early history of medicine, without being sensibly struck. The sick were exposed in the temples, or other public places ; the citizens began the work of the day by hospitable visits to these retreats of distress. Persons who had been afflicted with maladies similar to those of the objects of their visit, administered the remedies which they had found of advantage in their own cases. Thus did men profit by the experience of each other. This general and lively sympathy, these affecting fraternal attentions, this religious anxiety to relieve our fellow-creatures, had an inexpressible attraction, which cannot but excite our regret for the disuse of this ancient custom. Happy golden age ! in which the delightful union of physical frugality, and moral purity of life, extended a healthy and tranquil state of man to the period assigned by nature ; and left to that provident and wise mother all the energy which she required to counteract with success

success the destructive influence of external agents! Civilization daily increased the wants and the passions of men; they soon abandoned experimental medicine, which, indeed, was obliged to creep along from experiment to experiment, often unsuccessfully; but for these they substituted a hypothetical system of medicine, which did not fail continually to mislead them. HIPPOCRATES arose, who, if he was not the creator of medical science, may unquestionably be considered as its father and legislator. This great man immediately wrested medicine from the hands of the priests, who had made it a matter of religion, enveloping it in the thick veil of mystery and superstition. He collected the principal discoveries handed down by tradition; he submitted facts to the test of sound reasoning, and founded the science upon the ruins of those fanciful systems that had preceded it. Whence is it, that so bright an example has found so few imitators? By what fatality was it, that the path of practical medicine, suddenly raised by the genius of this celebrated legislator to an eminent degree of perfection, was so soon abandoned, and would have fallen into disgraceful oblivion, if a few men of enlightened minds had not, from age to age, been at pains to preserve it?

These deplorable errors have, in all ages, been the produce of sanguine and ambitious men. Led astray by too lively an imagination, strongly influenced by the philosophical opinions of the day, they substituted the glitter and luxury of science for simple facts and observations; they created opposite systems; founded inimical sects; surrendered medicine to theories generally unfounded, and enveloped experience in impenetrable clouds.

However, in establishing the principle, that all systems have retarded the progress of the healing art, let us do justice to the intentions of truly estimable physicians, who have been driven into that vortex: what other objects could they have, than to perfect the science, facilitate its study, and simplify its practice?

Of this truth we shall be convinced, if we observe, that every system is not so much the error of the innovator, as of the age in which he lived. Most medical theories owe their origin to the rapid movement which is so general and irresistible among men of talent, in favour of a predominant opinion.

It must be granted, that there has not probably been one system of medicine which, however dangerous from its indiscriminate application, has not been productive of interesting practical observations, valuable facts, and even frequently beneficial medical precepts.

It would therefore be an useful work, to enumerate and describe all these different theories, so as to advance the progress of practical medicine. Such

a work \* would be extremely interesting, particularly at this time, when a new system of medicine, after having enjoyed high reputation in England, Germany, and Italy, is seeking to naturalize itself in the soil of this immense republic; at this time, when the brilliant discoveries of modern chemistry tend, perhaps, to produce in the school of medicine a revolution more complete than any that has heretofore taken place. Will the healing art gain or lose by the establishment of these new medical theories?—how ought they to be received by physicians, anxious to perfectionate the art?—how far ought they to have a place in the present plan of study?—what part ought to be taken in the midst of their enthusiastic sectaries, and their obstinate antagonists?—Such are the questions which the medical philosopher will propose to himself in his study. The solution of these problems demands, no doubt, the most profound deliberation. I feel how much such an undertaking is beyond my abilities. I shall, however, attempt to trace the outlines of the inquiry, leaving it to a more experienced pen to finish the picture.

The doctrine of STOLL; the theory of BROWN; the application of the principles of modern chemistry to the art of healing, or chemical pathology;—these are the theories which I purpose succinctly to analyse. I shall compare them with each other, and consider their greater or less influence on the practice of medicine.

The principles of the humoral pathology, established by observation, and consecrated by a judicious and successful practice, the powerful influence of the *annual constitutions*, and of the periodical return of the seasons, upon the generation and succession of febrile disease;—such are the foundations of the doctrine of Stoll. It is not a theory or a system: the systems of medicine have uniformly been founded upon an hypothesis or abstract principle; the doctrine of Stoll rests upon facts. Consult his clinical annals (*Ratio medendi*): who deserves better of medical science, if allowance be made for the disgusting prolixity which characterises the greater part of scientific and literary German works? Who furnishes the young practitioner with better advice, to confine himself to a general rational method, when the curative indications are not obvious and satisfactory? Who deprecates more strongly submission to hypothesis and opinion?

Stoll was the man who established the principle, or rather, who revived the doctrine of Hippocrates, tending to prove that the season of the year determines the production of the material cause of fevers, while their form and seat depend upon the pre-disposing causes, and the mode of life adopted by

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\* It already exists in "Sprenkel's *History of Medicine*," 3 vol. 8vo. (in German.) See No. I. p. 83, of this Journal.

by the individual ; hence several diseases, which appear very distinct from each other by their symptoms, are analogous in their causes, and yield to a similar treatment.

Thus far have we been able to recognize in the clinical practice of Stoll, a physician truly Hippocratical, and guided by observation. Why has he not followed the same method in the precepts he has given us? Why, after having declared himself the enemy of theories, has he, in his aphorisms, adopted the theory of Boerhaave? It is indeed modified, reformed, and, in many points, not essentially different from the present state of the science; yet the laws of physics and mechanics are still there applied, without qualification, to explain the phenomena of health and disease; humoral pathology is throughout predominant; he takes no notice of that sublime doctrine of the *vital principle* and *organic movement*, which are so well unfolded in the writings of BOERHAEVE. The 'Aphorisms' of Stoll, perhaps the only elementary medical book now extant, ought then to be read with due precaution. If put into the hands of the young practitioner, ever eager in the pursuit of science and erudition, ever anxious to explain facts, it may divert him from the practical study of medicine, prejudice his mind in favour of a system, and conduct him to fatal deviations; unless the prudence of a judicious interpreter, the talents of an enlightened and philosophical commentator, distinguish in this work between that which belongs to the medical dogmas, to the doctrine of Hippocrates, and that which is merely the result of an ingenious theory.

Before entering upon the examination of the new modern systems, it may be proper to take a general view of the state of medicine in Europe, about the middle, or towards the end, of the present century.

(To be resumed in our next.)

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### *An Account of the Facitious Mineral Waters of Citizen* GOLDSCHMID.

[*Extracted from the 'Recueil Periodique de la Societ  de M decine de Paris, of Ventose. An. vii. February, 1799.'*]

(Accompanied by an Engraving.)

IN our last Number, p. 296, we announced Citizen GOLDSCHMID's memoir, and the superior virtues which he asserts his artificial Seltzer, Spa, and Sedlitz waters possess over those from the natural springs. We now proceed to lay before our readers, an account of these artificial waters, as contained in a report of Citizens BOUILLON LA GRANGE, and  
CHAUSSIER,



CHAUFFIER, read in the Medical Society of Paris, on the 27th Pluviose (15th February).

By this report it appears, that they examined three distinct species of artificial mineral waters; namely, those of Seltz, Spa, and Sedlitz.

Their first care was to ascertain the physical properties; they found them very clear and transparent, having a strong acid flavour; and that they gave the tincture of turnsol a deep red colour. By putting them in contact with different re-agents, they obtained, first, by caustic alkalis, neutral salts; secondly, by lime water, an abundant carbonate of lime; thirdly, poured on filings of very pure iron, the artificial waters, in a short time, acquired a ferruginous taste, which, after the properties already discovered, confirmed the presence of the carbonic acid and its action on the iron.

They then proceeded to examine the nature of the salts employed, and the quantity of carbonic acid which each bottle might contain. The methods followed to ascertain the composition of these waters, afford no novelty; the saline substances, however, employed, were similar to those described by BERGMANN. Upon the whole it appeared that the author had completely succeeded, and produced an exact imitation of nature.

As to the carbonic acid which these waters possess in solution, experience shews, they have a greater quantity than the natural waters. But in order to ascertain this quantity with the greatest exactness, Citizen Goldschmid has invented a very ingenious apparatus. See the annexed engraving.\*) By this apparatus it was discovered, that the waters contained twice and a half their volume of carbonic acid. The author even went so far as to assert, that he could separate three times their volume. But this superabundant quantity easily disengages itself, not only by being agitated, but by an elevation of temperature. Such an excess of acid is therefore useless, especially in medical practice.

The Medical Society also desired the Citizens Bouillon La Grange, and Chauffier, to examine the difference which existed between the artificial mineral waters of Goldschmid, and those of Citizen Gossz, of Geneva; but from the impossibility of procuring those of the latter, as recently prepared as those of the former, they were unable to make a fair trial. It is certainly very easy to conceive, that water which has been agitated by travelling,

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\* This apparatus may serve to obtain any other gas. It possesses the peculiar advantage of preventing the escape of the smallest portion, and therefore of ascertaining with the most scrupulous exactness the quantity of gas held in a liquid in solution.

velling, or which has been prepared any length of time, whether in a cellar, or any other place, will not bear a comparison with water which has been saturated only a few days. The two commissioners, therefore, had recourse to the report made by their colleague, DÉYÉUX, to the School of Medicine, who had carefully examined the artificial water of Citizen Goffe.

“Two pounds,” says that chemist, “of this water, placed under mercury, afforded twice and a half their volume of carbonic acid, the half of which was separated spontaneously, and the other half by plunging the bottle into hot water.”

It is evident from this, that there exists a great analogy in the result of the two experiments, since each of the waters contain twice and a half their volume of carbonic acid; and it is also evident, that there is no difference between the mineral waters of Goldschmid and those of Goffe; for, besides the equal quantity of carbonic acid, the chemical examination of the salts in dissolution, afforded the same results as those mentioned in the report of Citizen Deyeux.

This comparison must nevertheless be of great advantage to those who prescribe or make use of these artificial mineral waters, as it will enable them to obtain it of a proper degree of acidity; for it is evident, from the experiments of Citizen Goldschmid, that it is possible to supersaturate the water with the acid.

It appears that these artificial waters have been employed with great success in different maladies by several French physicians; and Bouillon La Grange, and Chauffier, conclude their report by recommending the establishment of a manufactory for them at Paris, in order to insure their being accurately and faithfully prepared, and also by declaring Citizen Goldschmid deserving both of attention and encouragement.

### *Explanation of the Gasolitre:—By Citizen GOLDSCHMID.*

“THE method hitherto used to ascertain the quantity of carbonic acid gas by lime-water, appeared to me very troublesome, not only because it at the same time precipitates the iron, the magnesia, and other earthy substances, which we are afterwards forced to separate, and because the operation of filtering always occasions a certain waste, but because the access of atmospheric air contributes, in a great degree, to form carbonate of lime.

“The pneumatological apparatus with mercury, which is at present in use, has the disadvantage of being always in equilibrium with the pressure of

of the atmospheric air ; and is consequently obedient to the laws of the barometer.

“ These several difficulties urged me to an endeavour at avoiding those obstacles, which I have overcome by the invention of the Gafolitre : this apparatus being fully adapted to calculate with accuracy, and in a short time, the gaseous parts contained in any body whatever, and to shew the pressure.

“ Fig. P is a glass measure containing two centilitres, or two drachms fifty grains : in fitting it with its cock for a double current of air, to the tube G, the cylinder C being full of mercury, the cock B shut, and the apparatus deprived of all possibility of admitting the atmospheric air, we shall find, in opening the cock H, that no vacuum is occasioned in the cylinder C besides that which is formed of the bubbles of air between the glass and the mercury, in filling the cylinder under the pressure of the atmosphere of seventy-five centimetres, or about twenty-eight inches, and that which the difference of the column of mercury in the cylinder C and the volume of air in the measure P under a pressure of seventy-five centimetres, reduced to zero, can produce.

“ We shall find this statement accurate in opening the cock Q to communicate the pressure of the atmospheric air into the measure P : in then shutting it opposite Z it will not produce a greater vacuum in the cylinder C than the pressure of the volume of air in P has been able to effect.

“ The little pump O, placed on the stand F, serves to graduate the cylinder C. We fill the bladder of gas, which we intend to measure, and open the cock S and T to draw a volume of gas, at all times equal, into the pump ; we open the cock T opposite U, shutting it at the same time opposite S, and push forward the piston to introduce the gas into the cylinder C filled with mercury, and shut by the cock B : when the cock H does not supply more mercury, we continue in this manner to introduce at intervals the same volume of gas into the cylinder C, in order to graduate it.

“ We shall obtain the first time a greater vacuum on account of the pressure of seventy-five centimetres, where the mercury meets ; this pressure ceases the second and following times, when it will be of an equal volume.

“ The operation will never be attended with success, if the external air can penetrate ; it is, however, easy to ascertain this by the cock H, which, when the whole is well adjusted and shut, does not furnish more mercury, after the effort of the pressure before explained.

To

To know the quantity of gas which the gaseous waters contain, we thus dispose the apparatus.

“ We shut the cock H and fill the cylinder C with mercury ; we shut the cocks B and K, and open the cock A, to ascertain the state of the apparatus ; if the apparatus be in proper order, it will not make a vacuum in the cylinder C, farther than the first mark ; we fill the matrafs up to the neck with the water we intend to analyse, and carefully fit the matrafs to the cock K. by a screw provided with a little shield of leather : the whole being well secured, we open the cocks K and H, and heat the water to the boiling point.”

#### EXPLANATION OF THE PLATE.

- A. Glass funnel to pour in the mercury.
- B. Iron cock.
- C. Glass cylinder, graduated, shut by the cock, and cemented on the plate D.
- D. Delft plate.
- E. Wooden stand.
- F. Stand to support the apparatus.
- G. Glass tube, the cavity of which is of the diameter of one millimetre, about half a line, and which communicates with the cylinder C.
- H. Tube of the same diameter, communicating with the cylinder C, and returning into the bottle J by an iron cock.
- J. Bottle and funnel to receive the mercury.
- K. Cock for a double current of air.
- L. Matrafs containing about twelve centilitres of water, (four ounces secured to the cock by a screw.
- M. Sand bath.
- N. Furnace.
- O. Pump, the cylinder of which is glass, secured by two screws to the stand F.
- P. Glass measure of two centilitres, or six drachms twenty-eight grains.
- Q. Cock for a double current of air.
- R. Bladder to contain the gas.
- S. Cock.
- T. Cock for a double current of air.
- U. Glass pipe coming from the cock T to K.
- X. Pump.
- Y. Stand on which to fix the pump.
- Z. Index of the second current of air.

*A Comparative View of the principal Theories which have prevailed in Chemistry, &c. By Dr. FRANK, sen. of Vienna.*

[Concluded from Numb. III. pp. 269—273.]

WHEN we attentively consider the phenomena which natural bodies exhibit to our senses ; when we compare the relative conditions in which these bodies are placed in respect to others, we are enabled to abstract certain rules or principles, by which we can ascertain the relation of such bodies, before they are exposed to causes which will produce various effects on them ; or, in other words, from the reciprocal affinity subsisting between bodies, we are able to determine their momentary relation to others, whether known or unknown. We know, for instance, from observations and experiments accurately made, that all inflammable bodies assume the state of combustion, and remain in it only as long as they are in contact with oxygen, in different degrees of temperature : hence we are led to conclude, that in every instance where inflammable bodies are placed in contact with oxygen, and in the requisite temperature, combustion will necessarily take place ; and, on a similar foundation, we predicate in every process of combustion, that an inflammable body and oxygen are the two active agents.

Such a law or principle, therefore, as is derived from pure experience, and is calculated to explain a particular phenomenon in the material world, is called a *theory* ; while the aggregate of such principles as enable us to explain a number of phenomena, or a whole series of events, is termed a *system*.

The philosophic inquirer will, however, soon remark, that no experimental pursuits possess mathematical certainty ; that the criterion of *certainly* cannot be discovered in the explanation of all the phenomena of nature ; and that we must be satisfied, in almost every instance, with greater or less *probability*.

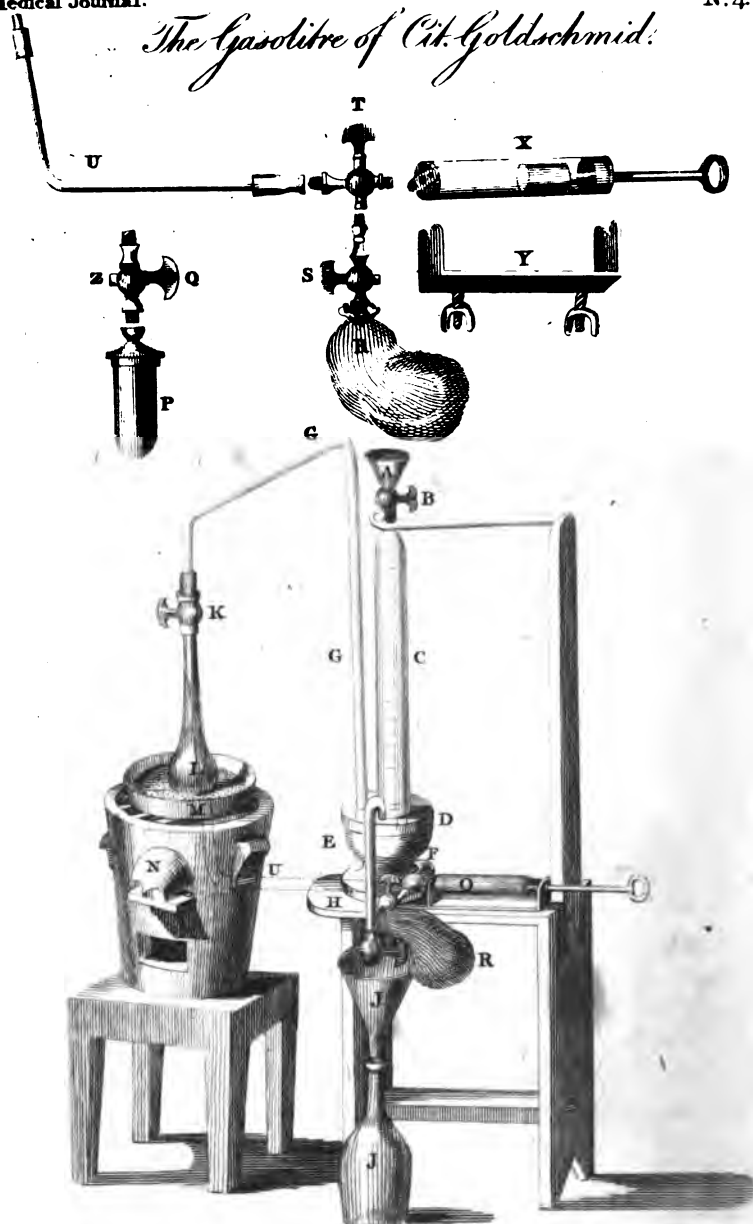
However discouraging this circumstance may be to the progress of the human mind in scientific researches, it is, at the same time, attended with beneficial consequences : for it is this imperfection in man, considered as a reflecting being, that urges him to investigate with so much zeal, the causes of the phenomena taking place, whether in the circle of animate or inanimate nature ; and to trace those hidden or manifest powers, by which she produces the endless variety of physical effects.

As long as these causes are discoverable by the reasoning faculty of man, he will not readily deviate from the true path of inquiry ; as he is capable of avoiding whatever may divert his attention, or disturb him in the perception of such phenomena.

But we are not, in every instance, equally fortunate : these causes frequently vanish from our researches : sometimes they are covered by an  
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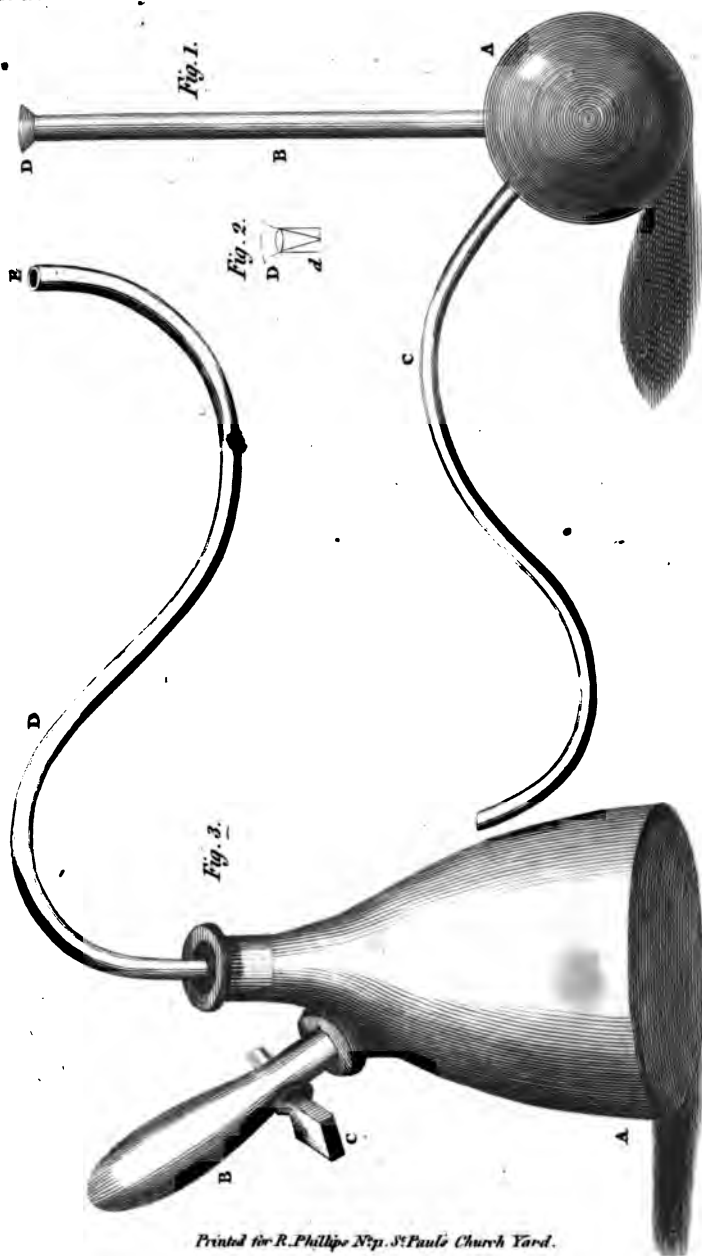
*The Gasolitre of Cit. Goldschmid.*



Printed for R. Phillips 71, St. Paul's Church Yard.







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impenetrable veil, and removed from the perception of the most sagacious inquirer. When the capacity and application of the external organs are suspended, our perceptive faculty is likewise arrested: thus the indefinite characters vanish from the circle of sensible qualities; and not being able to ascertain the necessary condition of our intuitive knowledge, *i. e.* that of *space* and *time*, we are at once checked in our search after certainty. Nevertheless, man is ever anxious to indulge in such inquiries, as he is extremely averse to leaving off, where the senses resign their office to the understanding. His intellectual powers revolt at such fetters, and, venturing into the regions of fancy, an immense field of ideas presents itself to his view; in the development of which, he finds ample scope for the exercise of his mental faculties. He compares, combines, and arranges his ideas, being principally guided by *analogy*. He adopts this as the scale by which he measures the relative truth of his notions; it serves him as a surrogate of perception, and is his faithful companion in every step. But, if he meet with obstacles, and this resource fail him, he is obliged as it were, to build a bridge, and to substitute an *hypothesis*, in order to cover a chasm which he cannot without reluctance, suffer to remain entirely open.

As we cannot in the immense field of physics, always attain positive knowledge, we are very frequently obliged to be satisfied with opinions and conjectures; if these be accompanied with plausible arguments, our satisfaction will be more or less complete. The highest degree of probability, and complete applicability, therefore, are the characters of a well-founded hypothesis—it ought to be perfectly consistent with nature; its principles should be simple, and of universal application.

Let this introduction suffice to explain the point of view from which the theories of every experimental science, and consequently those of chemistry, ought to be considered by the inquisitive student. It is necessary that he should previously settle that point, in order to prevent him either from raising the theory too high, or degrading it more than it actually deserves. Facts ever remain unaltered; but the manner of explaining them may be different. An accurate estimation of the methods adopted to account for the phenomena of nature, and a cool comparison with the facts on which they rest, will soon enable us to discover whether the one or the other of these methods deserve the preference; so that neither length of time, nor the authority of names, nor the country of the founder of a particular theory, ought to influence our determination. Such distinctions are neither rational nor scientific; for in the pursuits of science, we should attend to facts only, without paying regard to their origin, or who discovered them, except so far as they serve to illustrate literary history.

If these principles be applied to the different chemical systems, the outlines of which we have exhibited in the former part of this Essay, we may venture to examine them more minutely, as we have before given only a general account of the principles on which they are founded.

The doctrine first proposed by STAHL is, indeed, pregnant with too many imperfections to deserve general approbation. Phlogiston is the centre, round which the whole system turns; although in the sense in which Stahl and his adherents conceived the nature of that substance, together with the properties which they attributed to it, it is, in fact, a non-entity. In former times, when chemistry was in its infancy, people were easily satisfied with such explanations: but since the objects of chemistry have been multiplied; since numberless experiments and discoveries have been successfully made, and since the diversified phenomena of nature have been more critically investigated, the imperfections of the Stahlian system have been detected, especially since chemists have been fortunate enough to trace the origin of the gaseous fluids. In consequence of these improvements, modern chemists soon discovered the many paradoxical assertions contained in Stahl's system; and endeavoured to improve and adapt it so as to render it, in some degree, applicable to later theories: and although they did not fail to transform it with art and ingenuity, so that it no longer resembled its pristine form, it nevertheless remained too unweildy, and too little consonant with nature, to claim any permanent establishment.

The phlogiston of Stahl was maintained to be an elementary combination of earth and fire, incapable of penetrating through vessels. It was affirmed, that this matter formed all combustible substances; produced light and heat in combustion, by being decomposed into its constituent parts; and lastly, the phlogiston was the basis of all metals. It was, however, found out in later times, that combustion could only take place when vital air (oxygen) had access to that process; it was clearly perceived, that this æriform substance was diminished, and underwent a very obvious change of its nature. The chemists of the old school endeavoured to explain this phenomenon, by admitting that vital air is a substance deprived of all phlogiston, which substance had a greater affinity to phlogiston, and consequently abstracted it from bodies subjected to combustion. But according to Stahl's idea phlogiston should have been decomposed; fire should have escaped in the effect of sensible heat and light, and left behind the base of earth. Of this last, however, not the least trace could be discovered; on the contrary, it was observed that bodies, notwithstanding the escape of phlogiston, had actually increased in weight during combustion.

These

These difficulties were insurmountable; they induced Dr. CRAWFORD to maintain that vital air contained a great proportion of specific, or fixed elementary fire, but that it parted with this, as soon as it met with an opportunity of exchanging it for phlogiston, whereby it was changed into phlogistic air: such was the case in the process of combustion. But it was likewise inconsistent with experience, that in the combustion of phosphorus all vital air disappeared; and that no elastic fluid which could enter into combination with phlogiston, remained behind: besides, the æriform residuum in the combustion carried on in pure vital air, was, in most instances, an ærial acid which combined with caustic lime and vegetable alkali, and had nothing or what was called phlogistic air. From whence did this arise? It was indeed maintained, that it had been present in the substance previous to its combustion, and was only disengaged during that process. But on the other hand it was found, that this ærial acid, together with the residuum of the body subjected to combustion, exceeded the former weight of that body.—In order to explain this, some natural philosophers have maintained, that phlogiston is a substance of negative specific gravity, or such as renders bodies specifically lighter, and that its point of attraction must be in that universal luminary the sun: again, others believed that vital air is virtually water, expanded by the matter of heat (caloric), which water is deposited by vital air, and imparted to bodies during combustion; a circumstance by which they endeavoured to account for the increase of weight thus occasioned.

The doctrine of LAVOISIER, which exploded the existence of phlogiston, at length appeared, and excited universal attention. Former opinions were controverted, and phlogiston banished to the regions of fancy, because it could no where be exhibited to the senses; for though it should never be incoercible, it could in no instance be discovered where it should have been separated. Thus calcined mercury was treated in close vessels, without the addition of a phlogistic body, and nevertheless was reduced to its metallic form. Whence, then, did the phlogiston proceed, and how had it combined with the calx of the metal? It was asserted that phlogiston was incoercible, and virtually fire, in a fixed state. But even granting this hypothesis, there arises another important question: why could the metal not be calcined without coming in contact with pure air, as it was not prevented from depositing its fixed fire?

In this manner the doctrine of phlogiston was involved in still greater difficulties, by which the way was paved to the system of chemistry proposed by the ingenious Lavoisier. He supported his opinions by accurate and repeated experiments, the result of which did not much vary, when repeated by other chemists, in different countries. Such was particularly the

the case with the leading opinion, that vital air deposited or imparted its elementary base to combustible bodies, increased their weight, and changed their form, this base, on account of its property of forming acids, in combination with many other bodies, he denominated oxygen. Similar proofs of the truth of Lavoisier's assertions were given in the generation of water, as well as in demonstrating other principles of the antiphlogistic system.

Those who do not acknowledge the superior advantages of this system, are actuated either by prejudice in favour of former systems, or injustice to the merits of the French. It is incomparably more perfect than that of Stahl, and it is indisputably better calculated to afford a complete and systematic theory of chemistry. The most essential particulars relative to the composition and decomposition of bodies can be satisfactorily explained, and the different phenomena accounted for upon fixed and determinate principles. Let us consider the important influence this system has produced on several of the practical sciences, which are more or less connected with chemistry. Physiology, pathology, the practice of medicine, as well as agriculture, have each of them derived considerable advantages from the illustrations of the antiphlogistic school. We may reasonably expect to be still more benefitted by the researches of chemists, if they continue their efforts for the improvement of these sciences, and if physicians will devote their attention, more than they have hitherto done, in applying the principles of chemistry to the healthy as well as the diseased state of the animal body,

I shall illustrate this remark by a short digression.—The author of the criticisms on the theories of Dr. BEDDOES\*, as well as the great physician Hufeland, very justly observes, that in applying chemical principles to the elucidation of medical science, due attention ought always to be paid to the presence and activity of vital power in the animal body; a power which must necessarily occasion considerable deviations: and I here repeat, that this remark is well founded, as many modern practitioners have occasionally gone to such lengths, that the coolest observer who takes the trouble to examine some of their theories, cannot refrain from smiles; for instance, at the manner in which they explain muscular action. But it would be unjust to impute these errors to chemical science, as they proceed only from false theory, and an extravagant fondness in its application.

Satisfactory, however, as the system of Lavoisier appears in many points, it is, nevertheless, if examined without prejudice, not altogether free from errors

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\* Journal of Inventions, No. IX. to be extracted in a future Number.

errors and imperfections. Its opponents particularly object that the base of vital air does not deserve the title of oxygen, as many combinations of it are far from being acids. This, indeed, cannot be denied, yet it is also true, that all acids hitherto known, originate from that source; nay, that some metallic calces, by a superabundant communication of vital air, are changed into the state of an acid; and hence it may not be improper to borrow the name of oxygen, or the acidifying principle, from that property. But if the objection be still maintained, I consider it of little importance as the point of dispute relates only to a term, and as terms serve only to represent the signs by which we render our ideas intelligible to others. The sign itself, however, has no essential influence on the object signified, although it be true that each bears a close relation to the other, inasmuch as the character of the latter ought to be expressed, in the clearest possible manner, by means of the former. If therefore a more appropriate term could be contrived, to indicate the base of vital air, it would no doubt be adopted by every rational chemist, in preference to that of oxygen; but until this be done, we may be permitted to retain that term as the most suitable to the purpose.

The strictures which have been made by others, that this oxygen cannot be exhibited in a perfectly pure state, are equally unimportant. There is no substance in nature that exists without being combined with caloric; and how is it possible to exhibit a body, which, in this combination, is changed into a gaseous state, in any other form than that of gas?

But a more important objection against the stability of the antiphlogistic system has been frequently started by its opponents; it relates to the defective explanation of light, and the phenomena resulting from that element. Lavoisier has represented light and heat as mere modifications of one and the same substance; an assertion which certainly cannot be maintained. Although we were to admit that light, heat, electric, nay, even magnetic matter, are modified substances, yet they are such only in the hands of *nature*, and not in those of the chemist. All these substances present themselves to the observer, under so diversified an aspect, and are possessed of properties so peculiar, that we are necessarily induced to consider each of them as self-subsistent, and consequently to pay no attention to their *possible* modifications. In this respect we meet with an essential deficiency in the system of Lavoisier, who maintains that the phenomena of light and heat are only the results of that *condition*, under which any particular substance is disengaged.

This inconvenience, or rather incongruity, was indeed soon discovered by some acute chemists. They admitted the presence of two different substances

substances in these phenomena, and asserted that both light and heat were united to the base of vital air; and that, in the process of decomposition, they were either separated in a visible form, or entered into new combinations. Many phenomena appeared to confirm the truth of this assertion: thus, the perfectly pellucid nitric acid again acquires its colour, and emits red fumes, when exposed to the rays of the sun, an effect which heat alone does not produce; thus also, the superaturated muriatic acid is under similar circumstances, reduced to the standard of common muriatic acid: and thus, lastly, plants emit vital air, only when exposed to light, but never in a contrary state. In all these instances, vital air is formed, while the elementary base, abundantly contained in the acids, before mentioned, on account of greater affinity, fixes light and caloric, and assumes the gaseous form; but by these means the acids themselves are reduced to the state of imperfect oxydation. In plants, the oxygen is separated from the hydrogen, with which it forms water, as soon as the essential conditions (that is, light and heat) be present, in which only it can be changed into vital air.

These phenomena sufficiently prove, that the theory which supposes the matter of light to pass into oxygenous gas, is far from being a vague hypothesis, while they bear strong evidence of the actual presence of that substance in the gas. If this proposition be once admitted, it will not be difficult to explain all the phenomena of combustion, upon the principles of the antiphlogistic system.

There can be only one opinion among chemists, that oxygen is indispensibly necessary in every process of true combustion; but we should meet with insurmountable difficulties in explaining the phenomena of radiant heat, of lightning, or of mere heat, if, in oxygen gas, those substances were contained which, in a disengaged state, produced these phenomena, accordingly as they operate, individually or united.

By this modification, therefore, the apparent inconsistency of the system of Lavoisier may be easily reconciled, and all objections effectually obviated. It further adds to the satisfaction the philosophic inquirer derives from comparative researches, that the modification before detailed, in its principal points, agrees in a striking manner with the system of the two German chemists, Gren and Richter.

The chief point on which the latter system rests, and by which it appears to be distinguished from the antiphlogistic, is the doctrine respecting the existence of the matter of light in combustible bodies. But, upon attentively considering the system of the French philosopher, we shall find, that the difference is neither essential nor founded on reality.

The two chemists before-mentioned were, in fact, the first who represented the doctrine of this system relative to the matter of light, in its full extent; a subject which the antiphlogistians themselves had hitherto left undetermined.

The matter of light, however, as well as that of heat, is an incoercible substance, which, being diffused through the universe, is, like every other substance, subject to the laws of chemical affinity; consequently, this matter also, like that of heat, is capable of entering into combinations with all substances existing in nature. Is it, therefore, not perfectly consistent that these natural bodies, as soon as there subsists between them and oxygen a stronger degree of affinity than between them and the matter of light, should enter into combination with the former; and that if the product arising from this combination manifest either a very slight degree of, or no attraction at all, for the latter (that is, when the body combining with oxygen is of a combustible nature), they part, under certain conditions, with *their* matter of light, which in this case escapes, together with *that* of the oxygen, either alone, or conjointly with its caloric, becomes manifest to the senses, or forms new combinations. Thus arise the different degrees of combustion, both in point of violence and duration, accordingly as the quantity and modification of the incoercible substances (the matters of light and heat), disengaged from oxygen, as well as from the combustible body, are different in their nature.

This is a pure principle of the antiphlogistic system, although it has not been hitherto expressed in that form by the French chemists. The idea which, in their system, is connected with the term *lumiere* (matter of light), and the parallel in which this last stands with the matter of heat, is an incontestible proof of the preceding assertion. I believe that no friend of that system will be so grossly inconsistent, as to deviate from this explanation, or to maintain, that oxygen is the *only* substance capable of fixing and receiving light.

The changes which several substances undergo, when exposed to light; as, for instance, the muriat of silver, the solution of iron in vitriolic ether, &c. are sufficient evidence of its influence and fixation. But still more conclusive, in this respect, are the experiments which have lately been made by the Dutch chemist, and which deserve every attention, as the facts thereby established have long been known, although little attention has hitherto been paid to them. These interesting experiments relate to the generation of flame, in mixing melted sulphur with metals. This flame, which, so far from being the result of true combustion, is, according to the more appropriate term of Van Mons, rather that of ignition, or, as I would express it, of inflammation, very probably arises from the circumstance, that a part of the specific matter of light contained



tained in sulphur and the metals, is separated; because the union thence arising, or the sulphurated metal, possesses a less capacity for this elementary matter than both substances, jointly constituting the product, possess in a separate state.

That oxygen can have no share in that inflammation is obvious, because this phenomenon not only takes place in other species of gas, incapable of supporting the combustion of bodies, such as the hydrogen, and carbonic acid gas, but likewise in a vacuum; besides which, the preceding assertion is principally supported by the fact, that the combination thence resulting is not a sulphureo-acid, but a sulphurated metal.

Dr. Richter, indeed, explains this phenomenon in a different manner, and accounts for it by the decomposition of a small portion of water, adhering to sulphur (be it ever so well dried); a conjecture to which he is led by observing, that a slight trace of sulphuric acid is generated in the process. It does not, however, appear that the small quantity of oxygen disengaged sufficiently accounts for the origin of the phenomenon, inasmuch as this element, though contributing its share to produce the phenomenon, seems to be altogether inessential.

If, therefore, we admit the presence of the matter of light in all natural bodies, if it be granted, which cannot, indeed, be denied, that this substance is more or less, either singly, or combined with others, disengaged in the chemical change of bodies, and thus produces the phenomenon of light, we are at once enabled to explain, in a consistent manner, and with a degree of probability, all the phenomena in which light has any share.

Whether we adopt the idea of Dr. Richter, that light is a compound body, or whether we believe with Professor Götting, that light is a simple element in a free state, is in my opinion of no importance. Both conjectures admit of unequivocal proofs, and both explain the phenomena in an easy and satisfactory manner.

Notwithstanding these concessions, we cannot pay implicit respect to the different theorems laid down in the system of Professor Götting, as they are liable to many material objections, which have been already made to them by several chemists. The principal points in which this system differs from the antiphlogistic system of the French, or that of Richter, the non-existence of azote, and the opinion that the base of nitre, or azotic gas, is a combination of oxygen and azote have not been at all proved.

The experiments which induced Götting to maintain this opinion, have been frequently repeated by ISBLIN, LIND, JAEGER, and SCHERER, but have not proved in any degree satisfactory.

SCHERER

SCHERRER in particular has, by a repetition of these experiments, and the addition of several others, given the most decisive proofs of his skill in chemistry, and afforded the greatest accuracy of which the science is capable: he has proved that phosphorus neither emits light in *pure* azotic gas, nor is changed into an acid; but that these phenomena happen only when the azotic gas employed in the experiment, contains a portion of oxygen: for, when he procured azotic gas by exposing phosphorus in atmospheric air to the influence of red-hot-coals, for the space of an hour, he observed that the phosphorus incorporated with the air, remained unchanged, and that the emission of light did not take place. Mr. Gütting indeed objected, that the azotic gas thus prepared, contained phosphorus in solution, and was thereby prevented from decomposing the phosphorus incorporated with it. This objection, however, is of no weight, if we admit the principle, that the greater the surface of the body which is to be decomposed, the easier will the body, which is to decompose it, operate.

At present, therefore, the theory of Gütting is not firmly established, many important points still remaining in doubt. Whether these doubts will ever be removed, time must determine; till they are, we may be permitted to adhere to that system which appears most consistent and satisfactory.

G. R. FRANK.

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*On the practical Study of Botany, by means of Chemical Analysis:—Chiefly abridged from the Original Papers of Dr. T. S. HERBSTAEDT, &c.*

[Continued from Number III. p. 263 to 269.]

**B**EFORE we proceed in the chemical analysis of vegetable bodies, it will be necessary to exhibit a table of their various acid and saline ingredients.

**A. Essential acid salts.**

- a.* The tartaric acid.
- b.* The oxalic acid.

**B. Neutral salts.**

- a.* The sulphat of potash.
- b.* The nitrat of potash.
- c.* The muriat of potash.
- d.* The tartarite of potash.
- e.* The malat of potash.
- f.* The oxalife of potash.
- g.* The sulphat of soda.

**NUMBER IV.**

**U n**

**& The**

- b.* The muriat of soda.
- i.* The tartarite of volatile alkali, or ammonia.
- C. Semi-salts (*salia media*).
- a.* The malat of lime.
- b.* The tartarite of lime.
- c.* The oxalite of lime.

Besides these different saline substances, there exists in all vegetables an inert matter, possessing no peculiar qualities, and constituting the greatest proportion in almost every vegetable body. This fibrous matter is the residuum of plants, after frequent boiling in water, and after all the other parts have been extracted. It will be readily conjectured, that we here allude to the *vegetable fibre*, consisting of those canals and capillary tubes in which the various constituent parts were preserved previous to their extraction. Upon reducing this fibre by the action of fire, in a pneumatocchemical apparatus, we obtain hydrogen gas, (inflammable air), carbonic acid gas (fixed air), and carbonate of lime (carbon), from which last, by means of combustion in atmospheric air, the base of carbon escapes, and calcareous earth alone remains behind.

We have now treated of the different elementary constituents of vegetables, which are essentially distinct from each other, without enumerating the almost endless subdivisions and modifications to which the acids, the essential acid salts, and the neutral and semi-salts, are still subject. The number of them is certainly very considerable; for which reason, greater accuracy of observation, and more indefatigable exertion, will be required in the analytical process, than have hitherto been bestowed upon it. Notwithstanding every attempt to lessen the great number of these constituent parts, we cannot exclude any one without trespassing upon the established laws of nature. But on the other hand, the advantages which a chemical analysis, conducted upon these principles, promises to the enquirer, are so extensive, that they will amply reward the labours, which the medical and philosophic chemist may bestow on this fascinating and profitable pursuit.

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After this necessary digression, we shall return to the subject of experimental analysis, and only observe, with respect to the combination subsisting between the tartaric acid and potash, that this compound is met with in many vegetable bodies, sometimes in a state of saturation, and sometimes in a state where the acid predominates. These salts are chiefly discoverable by the circumstance, that, on red-hot coals, they emit the smell of burnt tartar, and leave behind a residuum, consisting of an alkaline carbon.—The oxalic salts may also be readily discovered, by precipitating  
a. solution

a solution of them in common spring water; and by the acid vapours they emit, if exposed to the action of ignited coals.

The neutral and semi-saline combination before specified, are not unfrequently found as formative or elementary parts in vegetables: their respective physical properties, however, need not be detailed in this place, as the student will readily obtain this part of botanical and medical knowledge from almost every introductory work on chemistry and pharmacy. In order to enable the reader to undertake a complete chemical analysis of vegetables, founded upon general principles, it would be necessary to give a detailed description of the different principles, or elementary constituents, of vegetable organization, each in their separate original state, affording, at the same time, an accurate characteristic of every external, as well as chemical criterion, to prevent any ambiguity or confusion. This the author of the present essay could not undertake, in the limited compass allotted to the inquiry; but he has pledged himself to bestow the requisite time and labour on the composition of a work, which may serve as an elementary code, exclusively devoted to the subject of botanical analysis.

Having premised these observations, we resume the practical part of the treatise:—

#### *Neutral Salts, and Vegetable Acid Salts.*

In examining these substances, we ought to proceed in different ways, according as we have opportunities of employing fresh or dried vegetable matter. The whole difference, however, merely depends upon this circumstance, that in the former case it is not necessary to make a decoction of the plants, but only to analyse the newly-expressed sap: and that if dry substances be used, a saturated decoction of them should be prepared in distilled water; with which we may perform the analytical process in the manner following.

1st. Let a slip of litmus paper be suspended in a portion of such decoction; and let another portion of it be mixed with the carbonated potash (in a dry and crystallized state); if, after some time, the paper become of a red colour, and, upon the addition of an alkaline salt, an effervescence take place, these are undoubted proofs that certain free acids, which are of a vegetable, and not of a mineral nature, are contained in the vegetables. In order to investigate the properties of these vegetable acids, we should proceed in the manner following.

2dly. Let a portion of the decoction before mentioned be diluted with distilled water, and a few drops of the solution of lime in the muriatic acid, be added to the mixture. If, after some hours, or even immediately, a  
precipitate

precipitate should be formed, and if the substance thus precipitated should be again soluble by adding a few drops of nitrous acid, it is then evident that the plant affords free oxalic acid, from which we may infer the presence of the essential salt of ferrel.

3d. But if, in the preceding experiment, no precipitation should take place, another portion of the decoction, previously diluted with a small quantity of the solution of lead in the acetic acid, may be employed. Should then a precipitate be formed, which is again soluble upon the addition of a small portion of nitric acid, it is manifest, that the vegetable under experiment contains not only free tartaric acid, but that it will yield real tartar.\*

As, besides these ingredients, there are also to be met with, in vegetables, a variety of neutral salts, which contain ammonia, or even potash, combined with sulphuric, muriatic, or nitric acid, their existence ought likewise to be ascertained by chemical analysis.

4thly. In order to discover the ammoniacal neutral salts, the decoction of vegetable substances must be inspissated to the consistence of a syrup, and, while yet warm, mixed with a third part (of its own weight) of the dry caustic potash. Upon holding a little wooden stick, moistened in concentrated acetic acid, over this mixture, visible white vapours will rise, if it really contain an ammoniacal neutral salt; but unless that be the case, no such vapours will appear.

5thly. The sulphurated neutral salts may be discovered by diluting the usual decoction with distilled water, and adding to it a little of the solution of barytes or the acetic acid. If it be impregnated with sulphuric acid, a precipitation will be the consequence.

6thly. The muriatic neutral salt may be discovered in a similar manner, by adding to the mixture a few drops of a solution of silver in the sulphuric acid, which, if it produce a precipitate, will infallibly shew the presence of muriatic acid.

7thly. The existence of nitre in vegetable bodies may be ascertained in two different ways: either by evaporating a few ounces of the decoction to dryness, and afterwards burning the substance so dried in a small crucible, when,

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\* If by the processes here detailed, a free acid cannot be obtained, either by means of the potash or litmus paper, and the decoction nevertheless affords precipitates with the re-agents before enumerated; and if the matters precipitated agree in their affinity with those already described, we may reasonably conclude, that perfectly neutral salts are present, which have the acids above specified for their basis.

when, if nitre be an ingredient, a slight detonation will shew its presence: or by mixing a part of the decoction with the fourth part of a mixture, consisting of equal parts of alcohol and concentrated sulphuric acid; which compound should stand four and twenty hours in a bottle, secured with a glass stopper. Should nitre be contained in it, the mixture, on opening the bottle, will emit the smell of dulcified nitric acid.

If we wish to ascertain the existence of neutral salts and vegetable acid salts in vegetable substances, in a recent state, the labours of the inquirer will neither be so complicated nor fatiguing as in a dry state. It requires little more than to reduce the plants, or other vegetable productions, to the consistence of a pulp, in a stone mortar, to express the juice by means of proper machines, and, after having allowed it to stand for some hours, to pass it through a filter. Thus prepared, it may be analysed, first, by immersing in it litmus paper, or adding to it the proportion of carbonated potash before stated. In order to ascertain the presence of free acids in general, and to discover the nature and properties of the particular acids, as well as of the neutral salts contained in the juice of such vegetables, the different processes already pointed out may be employed in their fullest extent.

(To be resumed in our next Number.)

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*Abstract of the Theory of Puerperal Fever; from a Letter communicated to the Editors of the American Medical Repository: By Dr. JOHN BRICKELL, of Savannah.*

THE author of this ingenious letter prefaces his new theory of child-bed fever with the following remark:

"During my course of anatomical studies, which continued several years, I had some valuable opportunities of dissecting women who died of puerperal fever; and, on perusing treatises written expressly on this subject by the British physicians, *Denman, Leake, Hulme, White, and Young*, I readily perceived such a mixture of truth, error, and misapprehension, as convinced me that they had examined this business too slightly, and rashly made up their opinions from partial and defective premises;" &c.

After having, rather severely, animadverted upon some particular parts of these theories, and furnished us with a new hypothesis relative to the mechanism of child-birth, maintained upon static and mathematical principles,\* the author thus proceeds in drawing the *practical inference* from his reasonings:

"From

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\* The particulars of this theory we propose to give in our next.

“ From what has been said, it is evident, that the blood is the great instrument (cause) of danger, from its *excess* in the abdomen, and its *defect* in the head; its excess producing fatal inflammation and fever, and its defect producing syncope and spasms, that sometimes carry off the patient soon after delivery; our great attention, therefore, ought to be directed to the regulation of its motions, so as to detach from the abdomen the superabundance, and lessen its momentum there; and to restore to the brain the quantity diverted from it, and which is necessary to remove its collapse, and re-establish the libration of the nervous system.

“ For this purpose, a broad bandage or two may be placed under the woman, ready to be properly tightened over a small pillow on the abdomen, as soon as delivery is effected; to serve as an artificial pressure and restraint on the influx of the blood (instead of the uterine pressure before the birth), and the abdomen ought to be elevated above the horizon, and the head depressed, that the velocity of the blood may be checked by its gravity, and its return to the head accelerated by the same cause. If cordials be given before this, the heart will be stimulated to act with more vigour, the abdomen will be more filled with blood, and the head more emptied; and so the danger increased.

“ Should enteritis, peritonitis, epiploitis, or any other inflammation, ensue, I apply the antiphlogistic means; but with reserve, on account of the natural discharges. I sometimes draw blood from the arm; and, in cases of extreme violence, I have repeated this operation three times in one day, with the happiest effects.

“ I once dissected a woman who died of a most violent puerperal fever. The whole surface of the peritonæum, strictly so called, as well as the parts of it which gave the exterior coats to the intestines, uterus, bladder, &c. had, with other marks of high inflammation, a coat of pus, like that observed in the corner of an inflamed eye, and as thick as broad cloth.

“ As I write for men, I do not find it necessary to repeat the particulars to be found in every practical treatise: my principal aim being to establish a just theory, which must be productive of a reasonable practice.”

HINTS AND IMPROVEMENTS  
IN THE PRACTICE OF  
MEDICINE AND SURGERY.

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ON the subject of *Digitalis in the Cure of Consumption*, as mentioned in our last, p. 289, & seq. we extract the following interesting passages, from a letter of a Correspondent, dated Enfield, May 6th, 1799.

“ I have had opportunities of observing effects, both salutary and injurious, very much resembling those of digitalis, in a strong decoction of *green broom*, when drank in large quantities, which is, I believe, well known to be an efficacious remedy for *dropsy*, particularly *anasarca*: and hence it may not be unreasonable to infer, that this plant may afford one instance of an analogous, safer, and more manageable remedy, in the treatment of consumption.

“ I was further informed, about five years since, that an empirical practitioner, who had acquired wealth and reputation by curing consumptions which had been given over by the faculty, made use of the juice of the lakeweed, or *ranunculus aquaticus*, both as an emetic, and (in nauseating doses) as an alterative. His patients were ordered to drink a pint or more of water gruel, previous to the exhibition of the juice, and then to swallow one ounce, or even two ounces. It generally operates expeditiously; but at all events, the patient was desired to continue drinking water-gruel, at intervals, till it did operate. The gruel previously drank was intended to prevent the acrid property of the ranunculus on the coats of the stomach.

“ There is a very remarkable circumstance attending the expressed juice of this plant, that it may be preserved many years, without becoming mouldy, or undergoing any material change. I have three quarts of it now by me, which have stood on a shelf, in an open laboratory, four or five years in common quart bottles—it has the smell of sweet-wort, and is quite pure.”

Our correspondent concludes with expressing a wish, that these circumstances may induce practitioners to pay some attention to the *ranunculus aquaticus*, as an herb analogous in some of its properties to the digitalis. As, however, we have already declared our sentiments on this subject, we shall at present only refer the reader to the 292 page of the preceding Number.



### 384 *On the most effectual Remedies in Rheumatic Affections.*

As connected with the preceding subject, we shall here also extract some characteristic passages from a publication which has recently appeared, entitled, "*An Essay on Consumption*," by Dr. BEDDOES. After having informed us that his own experience has fully verified the observations of Drs. Drake and Fowler (the substance of which we have given in our preceding Number, pp. 290—294), he proceeds in the following words:

"I daily see many patients in pulmonary consumption advancing towards recovery with so firm a pace, that I hope consumption will henceforward as regularly be cured by the *fox-glove*, as ague by the Peruvian bark. Could we obtain a single *auxiliary* for fox-glove, such as we have in many instances for the bark, I should expect that not one case in five would terminate as ninety-nine in a hundred have hitherto terminated. But I believe a majority of cases will yield to simple fox-glove. It is evident that no new cases need be suffered to advance beyond the first stage, without the application of this medicine, and sew into it." p. 270 and foll.

Disclaiming any share in this most beneficial discovery, Dr. B. says:

"The least considerate must perceive, that if the subsequent harvest correspond to the first fruits, there is a cause for NATIONAL REJOICING, greater and more universal than has ever before occurred."—p. 271 and foll.

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Dr. SZLIG, a German practitioner, has lately published in '*Hufeland's Journal of the Practice of Medicine*,' No. I. of Vol. VII. some recent and successful experiments made with a species of *fennel* (*wasser-fenchel*) in the cure of *Consumption*, accompanied with further remarks on the same subject, by the editor:—in a future Number we shall communicate to our readers the result of these trials.

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### *On the most effectual Remedies in Rheumatic Affections.*

THERE are rheumatic epidemics, in which the diseases, although they derive their origin from the same source, exhibit so different and diversified a form, that it requires the sagacity of a very attentive observer, to discover their common origin, their corresponding nature, and consequently to ascertain the most accurate indications of cure.

Upon the whole, it deserves to be remarked, that the effect of the translated rheumatic matter (*metastasis*) may be extremely different, according as it is of an acrid, inflammatory, or phlegmatic nature; according to the constitution of the whole body, and the individual condition of the part affected. This matter, or humour (for what else can it be called by the nervous and chemical pathologist?) generally settles on that internal part  
of

*On the Most effectual Remedies in Rheum.*

inflammation of the in-  
of the body, which has previously been weakened, &c.; but this theory is  
disease, or by other accidental circumstances. Hence by various writers,  
tism principally attacks such external parts as have been in universal German  
debilitated by contusions, wounds, ruptures, dislocations.  
Hence also it happens, that such individuals are sensible of eve  
the atmosphere which affects those parts, and which, as it is Tassell, have  
said, converts their bodies into living barometers. To the same of women  
causes it must be ascribed, that in certain anomalous fevers the or case-  
matter sometimes settles on those parts which formerly were subject to it the  
matisms or erysipelatous affections; and that the period of the disease is  
this manner determined: such, therefore, may be aptly called critical rheu-  
matisms.

The most effectual method pursued in the cure of chronic rheumatism,  
whether arising from a venereal taint in the constitution, or other causes, is  
that recommended by Professor CERILLO, of Naples. It principally con-  
sists of the following simple mercurial ointment, half a drachm of which  
is to be rubbed in, on the sole or soles of the feet, every evening previous to  
going to bed:

R. *Merc. subl. subtiliss. pulv. drachm i.*

*Axung. porc. Unc. i.*

*Teratur. per bor. un. et dimid ut f. Unguent.*

The efficacy of this remedy we find recorded in the '*Journal de Médi-  
cine.*' tom. LIX; in Dr. Richter's *Chirurgical Library* (in German) pub-  
lished at Gottingen: Vol. VII. p. 507, and 508.

According to the accounts given by Drs. CHEYNE and HOME, a mixture  
consisting of two drachms of spirits of *turpentine* and one ounce of honey,  
two tea-spoonfuls of which were taken every morning and evening, had an  
uncommon effect in promoting the discharge of urine, and relieving, in a  
few days a patient who had been afflicted for near a twelvemonth, with  
that species of rheumatism termed *ischias*.—But Dr. VOGEL, of Rostock, an  
eminent writer and practitioner, observes, that turpentine will relieve only  
that particular kind of pain before alluded to, and be of no avail in any  
other species of rheumatic affection. Nor does it always operate as a  
diuretic, and yet afford relief: sometimes however it is attended with no  
beneficial effects. He further remarks, that the extract of the *aconitum*,  
with the proper addition of *camphor*, in progressive doses, have uniformly  
proved successful in Germany; and that Dr. HERRZ, a respectable physician  
of Berlin, in one case, increased the dose of the *aconitum*, even to half a  
drachm! a case which almost terminated fatally; hence the necessity of

attending to a certain *maximum* for a dose, which ought never to be exceeded, without the greatest precaution.

In the *nervous* ischias, another foreign practitioner, Mr. TRAMPFEL, strongly recommends the use of pills made of *sulph. antim. aur.* and *extr. opii*, in due proportions, to be increased to such a dose as the patient can conveniently bear, and to be continued until all the pains have subsided.

Another very remarkable and instructive observation relative to the treatment of rheumatism we cannot withhold from our readers, as it is registered in '*Vogel's Practical Manual*,' second edit. (in German) Vol. III. p. 447; and in '*Baldinger's New Magazine*,' Vol. x. No. 2, p. 170.—Singular as it may appear to the superficial observer, it cannot be denied that the following process is founded on the established laws of the animal economy. It merely consists in gently beating the painful part of the hip or loins with a thin piece of whalebone, regularly several times a day, and immediately after it, covering the thigh afflicted with bags containing warm sand. This remedy is originally derived from an ingenious interpretation of a passage in Suetonius, according to whom, the Emperor Augustus was relieved (*remedio arenarum atque arundinum*) in a similar manner.

The most important and satisfactory authors who have treated on this disease are the following:—*Ballonius*; *Riviere*; *Morgagni*, L. IV. Ep. 57; *Huxham*; *Sydenham*, Sect. VI. Cap. v.; *Stöberck*, Ann II; *De Haen*, Tom. IV. Cap. 4; *Van Swieten*, Tom. V; *Sarcone*; *Pringle*; *Monro*; *Brocklesby*; *Höme*; *Baldinger*; *Macbride*; *R. E. Vogel*; *S. G. Vogel*; *Cullen*; *Clark*; *Tiffot*; *Corruinni*; *Sims*; and particularly *Stoll*, in his "*Ratio medendi*," Part III, in the chapter entitled '*De Natura et Indole Dysenteriae*.'

### *On Puerperal Fever, and its Treatment.*

We have already, in a preceding article of this Number, p. 381, communicated to our readers the new theory on this subject, proposed by Dr. Brickell, of Savannah: in the present paper we shall give a concise account of the various modern opinions, as well as methods of treatment lately adopted by practitioners in various parts of Europe.

Professor WALTER, of Berlin, maintains, that in a great number of dissections of the bodies of persons who had fallen victims to the puerperal fever, he has *never* observed an inflammation of the uterus, unless it had taken place in consequence of an unsuccessful operation of the accoucheur. He also believes, with the celebrated HUNTER, that the peritonæum is in a state of inflammation, and hence accounts for the suffusion of purulent matter over the intestines.

DE LA ROCHE, a French author, considers an inflammation of the intestines as the proximate cause of the child-bed fever; but this theory is certainly unfounded, and has been completely refuted by various writers, particularly the Reviewer of De la Roche's book in the Universal German Library, Vol. LXVIII. p. 123, &c.

Professor SOEMMERING, as well as Professor STEIN, of Cassel, have frequently observed in dissection, that the intestines of the bodies of women who had died of the puerperal fever, were covered with a purulent or caseous matter, similar to that noticed by WALTER and HUNTER; but the former of these anatomists, perhaps with some degree of injustice, treats as a ludicrous idea, what others have called in this fever, a metastasis of the milk.

The aggregate of these differences of opinion has lately been definitively settled in Professor Selle's "*New Contributions to Physical and Medical Knowledge*" (in German), Part III. p. 92; in which this learned author has proved by incontrovertible facts: "That the disease originates in an accumulation of corrupted humours in the abdomen, which humours have either been already separated in the form of milk, or intended by nature to be so. The causes of this accumulation may be various, but are principally an epidemic miasma, passions, sudden cold, and inflammation. In corroboration of Professor Selle's theory, Dr. Hermbstädt has proved by chemical experiments, that the fluid matter found in the cavities of the abdomen was *virtually milk*. It deserves however to be remarked, that the fat of the omentum and the mesentery, being dissolved by the febrile heat, may combine with the extravasated lymph, so as to produce a fluid of a more or less viscid consistence, and resembling milk in its external characters.

Almost all the French writers, *Le Roy, Puzos, Leuret, Deleurye, Paulet, Doucet, Doublet*, as well as *Boerhaave*, and partly also *Van Swieten, Gruner, Fuchs*, and many others, consider the metastasis of the milk as the leading cause of the child-bed fever. But it will appear from the following considerations, which are confirmed by daily experience, that the milk is altogether unconnected with the disease: 1. That lying-in women who suckle their own children, and have an abundant portion of milk in their breasts, are not exempt from the attacks of the fever: 2. That although the milk be scanty or deficient, sometimes neither fever nor any other distressing symptom will be the consequence; 3. That the fever, with all its concomitant symptoms, has frequently prevailed for several days, before the milk disappeared; 4. That the breasts in many cases remain filled with milk to the last stage of the fever; and 5. That in a variety of cases, after dissec-

tion,

tion, no traces of a metastasis of milk could be discovered. If, therefore, such metastasis really occur in puerperal fever, as have been frequently observed and sufficiently demonstrated by accurate practitioners, it ought to be determined in what condition they stand with the fever. Upon the whole, they are to be considered as *symptomatic* only, and not *pathognomic*.

We have been, perhaps, more diffuse, in stating the different opinions that have hitherto prevailed respecting the material cause of puerperal fever, than is strictly consistent with this department of our Journal: but as false theories frequently lead to false practice, we thought ourselves justified in extending the limits of this article.

With respect to the method of cure in this fever, we shall premise one very important rule, not to attack the disease with violent remedies, but to employ those of the mildest kind, so that the attempts of the physician may not do more mischief than the disease. This remark particularly relates to evacuates, although the principal indications of cure ought not, on that account, to be neglected: hence all acrid and stimulating remedies should either be avoided, or at least covered in emulsions, gum arabic, and the like, that they may fulfil the intention, without exciting too violent a commotion in the irritable body of the patient.

Phlebotomy should not be resorted to without the most pressing necessity. Let every thing be carefully avoided that can in any degree disturb the tranquillity either of mind or body. With respect to the debility accompanying this fever, a due distinction ought always to be made between hysterical weakness, and that arising from want of vital energy; and the practitioner should not be too timid in removing, as speedily as the strength of the patient and other circumstances will admit, any material cause which can be discovered, and may prove a powerful stimulus to the nervous system: for a few drops of acrid bile, or rancid mucus, may be productive of the most dreadful consequence. Hence the necessity of employing evacuates, with a steady and skilful hand: and to support the patient occasionally with other appropriate medicines, such as the castoreum, assafoetida, valerian, &c. as may best agree with her general state.

The sudorific remedies, as well as camphor, blisters, the warm bath, opium, bark, &c. which, in this fever, are frequently prescribed in a very empirical and indiscriminate manner, are each of them useful in proper time and situation, but none of them at all times, and in all cases.

A remarkable instance of the prevention of this disease occurred in the hospital at Lyons, where, according to POUTEAU's method, two or three  
emetics

emetics are regularly administered to women during their pregnancy, instead of bleeding them; and this precautionary step is attended with such happy effects, that since its first introduction, the cases of puerperal fever, or other diseases peculiar to lying-in women, have become extremely rare. Indeed such a fever, since that period, is there scarcely known by name, and its having proved mortal is a thing quite unheard of. Vide '*Richter's Chirurgical Library*', (in German) vol. viii. p. 75.

The best modern writers on this subject are, *Strother, Hulme, Leake, White, Kirkland, Butter, Denman, Hunter, Manning, Miller, Aikin, Johnstone, Stoll, Home, Gruner, Fuchs, Selle, Burserius, Doublet, Delaroche, Smellie, Oslander, Reil, Walß, Clarke, Ratzki, Kaublen, Thilenius, Nolte, Zebner, &c. &c.*

### On the Medicinal Properties of Iron.

Cit. MANDEL, professor of pharmacy and therapeutics at Nancy, member of the central jury of public instruction, has, in a late dissertation upon iron, endeavoured to explain the different neutral states in which it is found, as well as those to which it can be converted by art; the advantages derived from its magnetic property, particularly by the discovery of the compass; and its quality of attracting and conducting the electric fluid disengaged in lightning: he further attempts to demonstrate the affinity subsisting between that metal and oxygen, from the facility with which it forms combinations with saline substances; from its ready oxydation by air and water, and its solution in this last substance, which is decomposed by it.

He then passes to the action of iron on the animal economy; the cures which it sometimes speedily performs, and on the other hand, the accidents it is apt to occasion in certain individuals, even when given in small doses. This circumstance tends to determine a very interesting question, namely, whether the iron which exists in substance and in form in our humours, particularly in the blood, may not be considered, on account of its natural increase or diminution, as the cause of many diseases? He mentions *chlorosis*, as one which leads to a satisfactory result.

He explains the recent system of Dr. Rollo, who maintains that the greater or less quantity of oxygen in the blood is the cause of several disorders. Without overturning this principle, he opposes the author's application of it to certain diseases, particularly chlorosis, which, he says, is determined by the smallest quantity of oxygen, and against which he recommends the metallic oxyds, as the most proper to furnish the oxygen. He, on the contrary, proves that this disease is subdued by medicines  
calculated

calculated to lessen the quantity of oxygen, rather than increase it; that it is cured by iron which has undergone no preparation, but the minutest division of its particles; whence he concludes that we ought not to consider *oxygenation* but rather *ferrugination*, as the efficient cause of cure.

The author next settles the nomenclature of different disorders in which iron, or various preparations of it, ought to be administered; he points out those in which it is respectively indicated, as far as relates to the nature and state of each.

Last, he examines, whether the *magnet* should be admitted in the list of medical remedies, and enumerates the different systems, both of the advocates of this mineral and its opponents: he combats, from experience, the opinion of the latter, who nevertheless admit deleterious substances; he shews that it is at least doubtful, whether the iron contained in the blood be not attracted by the magnet; and, without admitting the truth of all the wonders attributed to it, and at the same time making allowances for the extravagance of praises lavished on it, he is of opinion that it ought to be preserved among the number of medicinal remedies.

We have purposely extracted this imperfect account from the xxviii Number of the 'Recueil Periodique de la Société de Médecine de Paris;' to give our readers a specimen of the manner in which articles of a practical tendency are generally treated in foreign Journals. Not a word of the doses, or particular cases, in which either the *iron* or the *magnet* can be administered with safety! In a future Number of this Journal, we propose to resume this subject, and to supply these deficiencies.

### *On bleeding Children afflicted with a large Head.*

In the first volume of the Memoirs published by the National Institute of France, we met with an interesting Essay of Cit. DESSEARTZ, "*On the advantages and necessity of taking but little blood at a time, from children afflicted with a large head.*" This memoir is avowedly the result of numerous observations, from which the author has selected two, as the most decisive. These, as well as the general tenor of the work, tend to shew:

1. The children with large heads, that is to say, those in whom that part of the body is of a greater size than is consistent with a sound state of health, or the just proportions of nature, have the least energy, and are most subject to convulsions.

2. That taking half a cup-full (palette) of blood, from the age of six months to a year; a cup-full and a half, or two cups full, from the age of  
one

*On the Propriety of performing the Cæsarean Operation.* 391

one to six years, are too copious ; and that topical bleeding, by means of leeches, may be substituted with advantage, producing a more gradual, and less debilitating evacuation ; and,

3. That suitable drinks, bathings, and, above all, emollient fomentations of the belly, may be employed with great success as auxiliaries.

Cit. Defeffarts considers these means united to be the foundation of the proper treatment of many other diseases of such children as have preternaturally large heads. Respecting these, and indeed children in general, the aphorism of Hippocrates, on the facility of accomplishing a crisis, is verified, when the physician has been fortunate enough to overcome the first obstacles, and thus to prevent the regular development of the phenomena exhibited by the disease.

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*On the Propriety of performing the Cæsarean Operation.*

THE Medical Society of Paris, after having heard the Memoir of Citizen BAUDELOQUE, on the Cæsarean Section, read twice, together with the interesting discussion it has produced ; and considering,

1. That it is proved by experience, that there are cases in which delivery is impossible by natural means ;

2. That, in a number of cases, the Cæsarean Operation is the only means which affords any hope of saving the life of the child ; and,

3. That this operation, serious as it is, has been *often* practised with complete success—

“ Are unanimously of opinion, that it is the duty of the practitioner to have recourse to the Cæsarean Operation in those cases where his professional skill deems it proper : and in order to enable men of science, as well as the public, to judge of an operation so interesting to humanity, *social order*, and the progress of the art, the society decrees, that Citizen Baudelocque's memoir, containing his inquiries and reflections relative to this subject, shall be printed and distributed among the different Administrative and Judicial Bodies.”

Without adding any commentary to this singular resolution of the Medical Society of Paris, we shall only refer the reader to some former articles on the same subject, which he will find in No. II. p. 197, and No. III. p. 308 and 309 of our Journal. It would be needless, and inconsistent with our plan, to say more respecting this controversy, which is now at issue before the public, and which has been discussed with equal calmness and scientific judgment in this country.

*Miscellaneous*



*Miscellaneous Facts and Remarks.*

IN the "*Recueil Periodique*," &c. No. XXVIII. we find a striking difference of opinion existing between two eminent practitioners, BAUDELLOCQUE and LAUMONIER, respecting the *amputation of the uterus*.

The following is the observation of Cit. Laumonier; "On passing the finger under the urinary canal, on the anterior part of the vagina, there was found a gangrenous spot of about one inch square. The operation is simple; I make a circular incision *above* the gangrenous spot," &c.

On this treatment, Cit. Baudelocque makes the following remark: "A circular incision is first made in the neck of the tumour, *under* the gangrenous spot of which Cit. Laumonier speaks, and consequently near two inches under the *meatus urinalis*," &c.

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In *apoplectic cases of children*, accompanied with fullness of the præcordia, and other symptoms of plethora, Prof. HUFELAND strongly recommends bleeding combined with emetics, in quick succession. The former facilitates the operation of the latter; prevents the danger which they might otherwise occasion; produces an antispasmodic effect; and disposes the emetics to remove the material cause, with greater safety and efficacy, from having an obvious tendency to produce the necessary change in the tone of the whole nervous system.

The indications for bleeding, in such instances, cannot be determined by the age of the patient, but by the urgency or danger of the case, the general constitution, the state of the pulse, and other circumstances.

In the case of a plethoric child, six years of age, who had fallen into an apoplectic fit, Prof. Hufeland directed four ounces of blood to be drawn from the arm; and as a solution of four ounces of antim. tart. gradually given, produced no effect, prescribed three grains of white vitriol to be dissolved in one ounce and a half of water, of which a table spoonful was administered every fifteen minutes. This soon operated; the patient vomited a great quantity of mucus and other crude matter; became perfectly sensible; recovered his speech and respiration; the violence of the pulse and febrile heat abated; the convulsions ceased; and the patient completely recovered.

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THE danger which always attends the opening of tumours of the knee, commonly called *white swellings*, is well known among practitioners, and

and that there is scarcely any chance left for the unhappy sufferer, but amputation of the whole leg. Yet there are a few cases on record, in which emetics have proved of singular advantage in white swellings, upon the same principle as, according to the report of *Riverius*, they have been once observed to cure the hydrocele.

Professor HUFELAND, in his valuable "Remarks on the inoculated Small-pox, and other diseases of children," p. 582, relates the following extraordinary case:

"A youth, 14 years of age, was for a considerable time afflicted with a swelling of the knee, so that he at length was altogether prevented from using the leg in walking. For some other cause, he was obliged to take an emetic, which apparently produced a diminution of the swelling. In consequence of this change, I directed him to continue the use of the antimonial tartar, in small doses, and after an interval of eight days, to take another strong emetic. On the day following, I perceived, with a degree of surprise, that the swelling had decreased half an inch. This method was, therefore, regularly pursued; the emetic was continued every eight days, and the swelling covered with the common plaster of pitch. The tumour gradually disappeared, and the patient was completely cured in six weeks."

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In our last Number, p. 279, we gave a short account of the carbon being used in America, has a remedy for habitual costiveness. As this substance, at least in a chemical sense, is possessed of great *antiseptic* powers; and as we are not acquainted with any particular remedy which, *a priori*, is better calculated to remove *bilious, acrid*, and other *morbid matters*, from the *prima via*, where they frequently produce the most important and critical changes, particularly in acute diseases; it appears deserving the attention of the practitioner, to ascertain whether a few doses of powdered carbon recently burnt, might not, in such cases, be attended with the most beneficial effects.

The *external use of carbon*, for instance, in the *hemorrhoids*, has long been known to our predecessors; and we are induced to quote the following curious passages from "*Hadriani à Mynsicht Thesaurus & Armamentario Medico-Chemico: Francofurti, 1675, 8vo.—Sec. v. p. 133.*"

"*Pulvis de Verbasco; R. Herb. Verbasq. viridis q. v. infer crucibulo quantum capit, ad summum usque infarciendo, deinde alio contege crucibulo, luto bene muni, igni impone, ut nigrificat eo, non vero in cineres abeat, cumque videbitur satis esse, crucibulum fac refrigerare, atram illam materiam exime, & in subtilem pulverem redige. Postea.*

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R. Hujus

R. *Hujus pulveris nigri*, unc. i. *Rhabbarbari electi*, drach. i.  
Mice & f. pulvis subtilissimus.

“*Vires & usus.* Certum hic pulvis est experimentum contra condylomata & hæmorrhoides caecas. Cujus usus est, ut aegrotus de *indusso viri erito* sumat particulam, eamque in uno latere paululum propria sua saliva humectet, de pulvere hoc aspergat, & ita superimponat toties repetendo quoties opus, donec condylomata & hæmorrhoides illæ caecæ dispareant, quod brevi tempore evenit.

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TYPHUS, particularly if attended with a putrid diathesis, is one of those diseases in the cure of which the whole *Materia Medica* is frequently ransacked, without enabling us to afford much relief to the afflicted. If, what a practitioner in Germany, Dr. KRÜGELSTEIN, has asserted with much confidence, in a late publication on that subject, be true, we shall henceforth be enabled to cure a putrid fever as readily as an ague, and perhaps with more expedition than consumption is overcome by the *digitalis*.

According to the experience of Dr. K. the malignancy of *typhus gravior* has in many cases yielded to *strong doses of mineral and vegetable acids*, when given alternately in such a manner, that the effect of the succeeding dose may begin, before that of the preceding one has entirely vanished. He goes still farther, and maintains that even pestilential disorders may be overcome by the combined powers of these acids. His method of exhibiting them is as follows: he first gives a dose of cream of tartar (from one to two drachms, according to the circumstances of the case), and immediately after it, from five to fifteen drops of vitriolic acid diluted with a sufficient quantity of water. These draughts are successively administered to some patients every hour, to others every two, three, or four hours. Dr. K. relates wonderful effects produced by this new practice, but we have some reason to apprehend, he has mistaken the nature of the fever. Vid. *Journal of inventions*, No. I. p. 131.

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As the removal of *biliary calculi* has hitherto been considered impracticable by any remedies taken into the stomach, our readers may not, perhaps, in general be acquainted with a remedy proposed for that purpose by a late French writer, M. DUREAND. In hepatic complaints arising from biliary concretions, he prescribes from ten to twenty drops of a mixture consisting of equal parts of vitriolic ether and spirit of turpentine, to be taken several times in the course of the day, assisted by opium, laxatives, emollient clysters, &c. according to the circumstances of the case.

MEDICAL

# MEDICAL AND PHYSICAL INTELLIGENCE,

(Original and Selected.)

THE tenth Volume of the Transactions of the French Royal Society of Medicine, and the fifth Volume of the Prize Questions of the Academy of Surgery, have been lately published by the professors of the School of Medicine at Paris, in three volumes, quarto. This extensive and multifarious '*Extraît*' contains, as may be expected, a great number of articles equally interesting and useful to medical science. From these we shall extract some particulars of *Vicq-d' Azyr's Eloge*, of *Poullietier de la Salle*, whose first work was a Translation of the London Pharmacopœa, to which he added a Dictionary of the *Materia Medica Vicq-d'Azyr*, in treating of the difficulty and importance of a complete medical code, introduces reflections which will be the more interesting to our readers, as they relate to the progress of practical medicine, perhaps now as far distant from perfection, as it was at the time they were written.

"The members of the London College of Physicians, uniformly remark, and it cannot be too often repeated, that there is no greater obstacle to the progress of the medical art, than the practice of mixing a great number of drugs, in the same formula. Thus we are ignorant to which of the remedies the success is due: and unless the particulars are ascertained, our judgment must ever remain uncertain.

"Besides, if notwithstanding the labours of the most learned societies, we have not yet a good pharmacopœa, it proceeds only from the difficulty of the task. To mix in the cold compositions substances truly active, and to retain them; to search in the writings and practice of the most eminent physicians, what remedies are most successful, and the improvements that can be made on them; to consult even empiricism, and profit by its daring experiments in judging by observation, rather than submitting to the theories of the day; to reject the numerous compounds which are employed without any just cause, as they are compounded without reason; to impart to medicines a uniform strength, the result of which may be calculated; to bring them to a state of simplicity, which can leave no doubt of their effects; and never to deviate from the rules prescribed by chemistry; that is to say, to unite to a perfect knowledge of the history of medicine a profound study of its auxiliary sciences; to acute feeling, a correct understanding; to the greatest prudence, that boldness which is necessary to the attainment of any end—such are the talents and qualities required in those who undertake to regulate our formulæ.

"Already have the discoveries of Bergmann and Scheele produced in this respect a beneficial revolution. The physicians of Stockholm first set the example. Those of Wirtemberg, Geneva, Edinburgh, and London followed. The Medical Faculty at Paris is at this time engaged in the same reform. May we not hope, that all the colleges, impelled by the progress  
of

of knowledge, may erase from their dispensatories informal recipes, monstrous assemblages of contradictory substances, whose virtues counteract each other, and which have been sanctioned only by ignorance? The numerous votaries of ancient superstition boast of their brilliant eras; they assert that we have only pulled down, without rebuilding; that we have substituted nothing for what we have destroyed. Vain declamation! too often repeated by the opponents of science.

"The moment the clouds are dispelled, the sun succeeds; and truth, like light, is one of the most valuable presents that can be made to human nature.

"The authors of the London Pharmacopœia having spoken freely against Fernel, one of the most illustrious physicians of the French School, Poulletier complains loudly of that jealousy."

"Poulletier had begun a great number of works which he did not complete. Among these sketches is to be distinguished an Essay on the accidents produced by the admission of air into the different cavities of the human body. From his researches on this subject, it is established that the small intestines are more irritable than the great ones, and that the uppermost parts of the latter possess a greater degree of irritability than the other parts."

Among the other manuscripts of Poulletier de la Salle, of which Cit. G. Roi is the depositary, are to be found the details of experiments on Sensibility; remarks on the means of dissolving the extremity of a leaden probe in the bladder; but the most remarkable tract in this collection, is a number of observations on congestions of the brain. From this work and the inquiries of Walter, is established the great medical truth, that a number of acute diseases terminate in a sort of apoplexy, in which the brain, surcharged with moisture, loses its activity, and sinks under the oppression.

Poulletier is likewise the author of enquiries on soda and kali; and of an analysis of bones, which afforded him, what Gahn and Scheele had merely announced, phosphoric acid and lime. Indefatigable in his other labours, and animated by the same excessive desire of discovering new truths, he examined sedative salt and bile; in the latter of which he discovered spermæti, which has since been found in a great mass in the cemetery of the Innocents, by the commissioners of the Society of Medicine, who superintend the digging up of the bodies.

Poulletier has also analyzed Farina, and commenced in conjunction with Fourcroy, in 1786, a series of experiments on the human calculus.

The other physicians, to whose names Vicq. d'Azyr offers a tribute of praise in this volume, are Bourdois de la Mothe, Thion de la Chaume, le Houx, Duvernin, Dupuy, Destrapieres, Dofan, and Manneti, associates and correspondents of the Society of Medicine.

Among the articles contained in the extracts lately published from the memoirs of the School of Medicine, we find two very ingenious essays, the one by Citizen JURINE, and the other by Citizen GATTONI, with observations thereon, by Citizen Seguin, on the following important question:

"What advantage can medicine derive from the modern discoveries in the art of ascertaining the purity of the air, by the different eudiometers?"

Citizen Jurine's memoir, which gained the prize in 1787, is divided into four parts:

The first relates to the modification of atmospherical air by respiration.

The second treats of the air which is exhaled by the skin, and of the nature of ambient air in different diseases.

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The third explains the difference of atmospherical air, the air of hospitals, and sick rooms.

We shall examine each of these sections of Cit. Jurine's work successively, taking notice at the same time of the principal observations made by Seguin.

In the first place, Jurine remarks on the opinions, the views, and the simple discoveries of Priestley, the Abbé Fontana, Scheele, Bergmann, and Morozzo, and the solid and luminous theory of Lavoisier and Laplace. He next explains the extent and capacity of the lungs, after Hales and Jurin. Afterwards he analyzes the air expired in different circumstances of life and health.

The means of analyzation were lime water, nitrous gas, and the flame of a wax candle.

Experiments were in the first place made to ascertain the difference relative to age, sex, the state of fasting, and the effect of digestion. The air produced by the most complete expiration was then divided into four parts, and successively submitted to a comparative analysis. The other experiments were intended to ascertain the changes produced in the air expired in fever, the last stage of consumption, blood-letting, respiration in pure oxygen, or in air rendered less respirable from previous respiration. Citizen Halle having already published a part of the results of these experiments, under the article *Air* in the *Dictionnaire de Médec. de l'Encycl. Méth.* it is unnecessary to repeat them.

To this first part of Cit. Jurine's memoir, Cit. Seguin directs his principal objections, which directly attack the accuracy of the eudiometers, the lime water, and nitrous gas employed.

The other observations relate to the quantity of carbonic acid gas formed during respiration, and the pretended formation of another gas.

In the second part, Cit. Jurine explains several experiments made upon himself, the result of which were, that he disengaged a certain quantity of carbonic acid gas by the skin. Cit. Seguin thinks, on the contrary, that the carbonic gas does not issue through the skin, but is only that formed by the act of respiration, which, descending by its specific weight, in the bath where the Genevese physiologist made his experiments, had displaced the atmospheric air from the vessels he employed.

Citizen Halle has again offered the principal facts deduced from the experiments contained in the third part. The objection of Citizen Seguin against their result in general, that there is uniformly produced a kind of *mephitis* in the intestinal canal, is, that on the contrary, the predominance of azote in the large intestines, according to the experiments of Jurine, ought not to be attributed to the atmospheric air contained in the stomach and intestines losing a portion of oxygen, and the azotic gas becoming by that means more abundant.

The fourth part of this work exhibits a short view of the improvements medicine has received from pneumatic chemistry, which, in the report, is brought down to the present period.

The memoir of M. Gattoni, like the preceding, is intended to give a solution of the physiological problem proposed by the Medical Society, and contain the particulars of a variety of researches and experiments. The author, after relating the history of the nitre-aërial eudiometer, and shewing the incorrectness of that instrument, and its general insufficiency to ascertain the change of the air by the different kinds of miasmata, adopts the eudiometer of Volta, which he describes. The experiments made with this latter instrument, like those made with all the others, have only elucidated the  
different

different proportions of azote, oxygen, and carbonic acid gas variously modified, by different airs, or by the state of the patients on whom the experiments were tried, or by the different causes of disease.

In a memoir by Citizen DELUNEL, read before the Medical Society of Paris, the 22d Pluviôse (February 10, 1799), upon opium, and the different preparations of its extract, which also contains an inquiry, whether the resin of opium may be useful in medicine, we find a new process for preparing the extract, which, with the author's observations thereon, we shall give in his own words.

"It is easy," says Delunel, "to administer opium in a dry form, either in powder or pills; but its effects are, perhaps, to be dreaded, on account of the difficulty of dissolving it in simple watery fluids, or in those which it may meet in the stomach. The difficulty consists in liquifying it, without employing as a solvent alcohol or any other spirituous liquor. For this purpose I have employed Rousseau's process, namely, fermentation; with this difference, that the resin of the opium was employed in place of the opium entire. Six ounces of the resin of the opium, one pound and a half of honey, and six pounds of water, were exposed together to the sun for six weeks; the fermentation was visible at the end of eight days. When it was over, and the liquor filtered, I found six drachms of resin dissolved in it. I left this mixture for a month, to discover if there actually was formed a combination of the resin of the opium. A spontaneous evaporation with a near approach, in consistence, to extract, the addition of potash and ammonia to the before-mentioned solution, have evinced the presence of the resin of opium. I shall make only one remark, that the sulphuric acid does not act here in the same way as with the juice or extract of several vegetables, that is to say, it produces no precipitation. In considering the process which I have described, the solution of the resin of the opium may, perhaps, be attributed to a spirituous principle, formed during the fermentation by the help of the honey. To satisfy myself upon this point, I distilled a part of my product; and the liquor distilled contained so little of the principle of alcohol, that I found it impossible to dissolve, by its means, any quantity of resin, and the residuum of the distillation has always remained clear, with a very strong putrid odour; whence I conclude, that the division of the resin of the opium in water is as much owing to its combination with other principles, as with that of alcohol, which has hitherto been believed to be its only solvent.

"I have made the same remark as Baumé, in his 'Pharmacopœa,' when speaking of Rousseau's drops, namely, that there is formed on the surface of the liquor a pellicle, which he attributes to its mouldiness, while I consider it to proceed from the purification of the honey and of the resin itself. The filtration takes away as much as is required, and I have not seen that the produce was the resin itself."

M. ABICH, a German chemist, has lately published in '*Crell's Annals of Chemistry*,' a chemical inquiry into the nature and properties of the *honey-stone*. This substance is found in Thuringia, between beds of bituminous wood, and is sometimes near an inch in diameter; it is crystallized in great masses, in a double pyramidal form, with four sides; it bears a great resemblance to amber, but does not, like that substance, become electric by rubbing: its specific gravity does not exceed 1.666.

It further appears from M. ABICH's analysis, that fifty parts of this fossil are composed of eight parts of the carbonate of alum, two of carbon,  
one

one and a half of oxyd of iron, twenty of carbonic acid, fourteen of the water of crystallization emitting the smell of bitter almonds, and two and three quarts of ether. Total forty-eight, one fourth.—The loss of one and three-fourths, and the agreeable odour which was exhaled during the operation, the exact nature of which the author had not been able to ascertain, determined him to repeat his experiments with some variation. The second analysis added to the produce of the first, a small portion of the benzoic acid.

An analysis of the same stone made by M. LAMPADIUS, afforded the following constituent parts, viz. 86.40 of carbon, 3.50 of petroleum, 2.00 of silicæ, and 3.00 of the water of crystallization. Hence Von Crell is of opinion, that these two chemists have examined different stones.

In consequence of the result of his experiments, and on account of the perfect incombustibility of the honey-stone, M. Abich proposes to exclude it henceforth from the class of combustible bodies, and to place it among that of aluminous earths.

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The *Academy of Surgery*, at *Copenhagen*, have recently made an important change in the examination for degrees. The candidates are now shut up in the anatomical theatre, where they dissect particular parts of a subject, and reduce the result of their observations to writing, instead of giving them *viva voce*.

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As several eminent writers have denied the possibility of *distinct impregnation*, it may be useful to collect the facts that seem to favour its existence.

In the '*Recueil Periodique*,' No. xxvi. we meet with the following curious account of twins; one a perfect birth, and the other apparently of six months only; communicated by ROCH TARBES, officer of health at Touloufe.

"In the month of September, 1790, the wife of Cit. NOEL, about thirty years of age, and much inclined to corpulence, was in the last month of pregnancy. She had irregular pains for eight days; on the ninth she fell in labour, and I delivered her of a boy in the natural way.

"As I put my hand into the uterus, to get at the placenta, I discovered in the vagina the feet of a second child, enveloped in its own separate membranes; which, being broken, produced a discharge of water, and afterwards a female child, that was delivered by the feet with the greatest facility.

"The two placentaë were perfectly distinct, having each separate membranes. The most remarkable circumstance was, the disproportion subsisting between the two children; the boy being eighteen, while the girl was only twelve inches high; she had no nails, and was not better formed than a child in the sixth month of pregnancy. As she could not suck, she was kept alive eight days with cow's milk."

This case is attested by *Noel, the father*, now surgeon in ordinary, of the second class, to the Military Hospital of Touloufe.

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The following Prize Questions have been proposed by the Medical Society of Paris for the present year:—

1. "To determine the nature of the lymph; its use in the animal economy, and the advantage which medicine has derived, and may still derive, from the modern discoveries respecting the structure and functions of the lymphatic system.

2. "To determine, by experiments and observations, what are the medicinal properties of phosphorus, and the phosphoric and phosphoric acids;



acids; in what diseases they may be employed with advantage, and in what manner they act.

3. "To determine, from anatomical inquiries and inductions drawn from practice, what is the cause of aneurism, according to the nature of the disease, its state, the part which it affects, and the circumstances attending it.

4. "To determine, by accurate experiments, the influence of oxygen in the animal economy, particularly in the treatment of diseases, both internal and external.

5. "To explain the causes and symptoms of *tetanus traumaticus*; to ascertain their diversity, and manner of cure.

6. "Are there any precursory symptoms of the tetanus or trismus traumaticus?"

Professor SCHRANCK, of Ingolstadt, has lately enriched the science of botany with a work treating on that very curious and interesting branch, called *the physiology of vegetables*. The author has taken a particular view of the secondary vessels of plants, by which he understands the down, the spiculae, the glands, and the vesicles. His principal object is to shew, that these vessels may afford an additional mean of determining with accuracy, the classification of Linnæus, when his distinctions are equivocal; and that such vessels, according to *Malpighi*, from the extremities of those canals in which the fluids, that supply the plant with nourishment, circulate, and which only inhale the air without exhaling it.—Much has been done in this curious branch of botanical science, by the ingenious labours of *Hales*, *Ingenhousz*, *Duhamel*, *Bonnet*, and *Sennebier*, but the German Professor aims at a systematic arrangement of this fascinating subject, which has not been attempted by his predecessors.

Citizen DU MONT COURSET has, in a letter to the Editor of the '*Magasin Encyclopedique*,' made some very ingenious observations on an opinion of *Van Helmont* and *Boyle*, quoted by *Boissonarde*, "that plants draw their principal nourishment from water." Some account of these observations will be given in our next Number.

It is acknowledged by all botanists, that an "herbarium vivum" is an excellent mean of promoting the study of this useful science; and that such a work is particularly wanted to illustrate the complicated and extensive class of the *Cryptogamia*.

Mr. J. A. HÖSE, of Heidelberg, has devoted much time and attention to investigate the nature of mosses, so that he has at length published the first Number, containing twelve plates, or twelve different species, of his "*Herbarium vivum Muscorum frondosorum cum descriptionibus analyticis ad normam Hedwigii*." This elegant collection is accompanied with copious explanations in Latin and German, which must render it an acceptable present to the English student desirous of acquiring some knowledge of the German. Upon the whole, it may justly be called a splendid little performance; and we have only to regret that the author cannot furnish more than two such Numbers every year.

Cit. DELILE, who is now in Egypt, in the capacity of a botanist of the expedition to that country, has made several important discoveries of plants. As we propose to give a more particular account of Delile's botanical exploits, in a future Number, we shall at present mention only the discovery of a new species of palm-tree, to which he has given the name of "*Le Palmier Down*," and which has not been hitherto satisfactorily described.

In

In our last Number we promised to communicate to our readers two chemical processes lately invented by Dr. RICHTER. The first is an improved and profitable method of preparing the *crystallized acid of lemons*, from the juice of either fresh or putrid lemons, currants, &c. and deserves the preference over every other hitherto contrived, because when the juices, which is generally the case, are saturated with calcareous earth, the citrat of lime thus produced, retains a part of the extracted matter which cannot be separated by ablution, and which consequently unites with the acid, and renders the crystallization difficult. The acid juice, therefore, should be saturated in a boiling heat with vegetable alkali, the exact quantity of which should be particularly attended to. After this add such a proportion of the muriat of lime, as can be decomposed by the vegetable alkali before employed. This proportion may be ascertained either by previous experiment, or from the table shewing the capacities of the elective attraction of bodies, inserted in Dr. Richter's fifth Number of his "*Reflections on the Modern Subjects of Chemistry*." While the mixture before specified, is boiling for a quarter of an hour, the muriatic and citric acids exchange their combinations; the former produces the muriat of potash, and the latter is precipitated in the form of citrat of lime. This after being completelyedulcorated, must be dried, and afterwards digested in such a quantity of diluted sulphuric acid, as is required for saturating the calcareous earth contained in the citrat of lime; the point of saturation ought either to be determined by previous experiment, or regulated by Dr. Richter's tables of decomposition given in the work before mentioned.

After having properly managed this part of the process, the separated citric acid must be evaporated in a similar manner as is done with the acid of tartar; the sulphat of lime still settling must be carefully separated; the acid is then to be mixed with water in which carbon is diffused, and after the mixture is perfectly clear and pellucid, it is exposed to a slow, spontaneous evaporation, which will produce beautiful crystals of the size of peas. From twenty-six quarts (Silesian measure, nearly the same as English) of the juice of putrid lemons, Dr. Richter obtained upwards of a pound of crystallized acid.—See *Crell's Annals of Chemistry*, Vol. II. p. 380.

The *Citrat of Iron*, to the discovery of which Dr. Richter was led in his stoichiometric experiments, deserves a distinguished place among our officinal chalybeates. And although few physicians on the Continent have hitherto prescribed it as a medicinal remedy, yet we are entitled to say, upon the authority of D. Frank, of Gnesen, that he has found this compound of singular benefit in many diseases.

It is, in every respect, a neutral salt, the preparation of which Dr. Richter performs in the manner following:—Equal parts of iron-filings reduced to powder, and crystallized acid of lemons, or the residuum which is obtained after the crystallization of the citric acid, are mixed; a sufficient quantity of water is then added, and the mixture stirred for some time. Afterwards it is exposed either to the heat of the sun, or kept in some warm place, till it be gradually inspissated, during which time, however, it ought to be frequently stirred up. Of the dry mass, a lixivium must be made with water, which dissolves a considerable part of it. This solution, if evaporated to dryness, affords the citrat of iron in the form of a light brown powder, which is readily soluble in water. The residuum of the preceding preparation, if mixed with more water, slowly inspissated, then reduced to a lixivium, and evaporated again to dryness, produces repeatedly the same result without any further addition of

citric acid, till at last the iron and lime, in a combined state, remain behind, without possessing any acid. *Ibid.* p. 382.

D VALERIAN ALOYS BRERA, Professor of Medicine, in the University of Pavia, has lately been under the necessity of resigning his chair, on account of the political intrigues and party factions that have begun to disturb that ancient seat of the muses. Dr. RASORI, a young man, and a more enthusiastic Brunonian, has been appointed his successor. This change however, we are happy to add, will not affect Prof. Brera's literary publications (*Vid.* No. II. p. 203 of our Journal); on the contrary, we are authorised to say, that he will continue his exertions with increased zeal. *Vid. Jena Intelligenzblatt.* No. xxix. p. 388.

Among the late *Inaugural Dissertations* which characterise the *Leipzig College*, we meet with two deserving of particular notice. One of those was defended by Dr. H. W. Richter, and entitled: "*Medici ex omni parte perfecti imago*;" the other is a continuation of Vice Chancellor Dr. HASSE's Dissertation, (Sect. II.) *De us quae* (we would rather say) *que artem difficilem reddunt*.

English literature, and particular medical literature, is much valued on the Continent, if we may form some comparative judgment from the translations of English works into the German language, which are continually advertised in the Literary Gazette of Jena. There appears to be a spirit of rivalry prevailing among both translators and booksellers, who generally conclude their advertisements with saying, that they have obtained an early copy of the work from England, (sometimes even before it is published here), and thus claim a right of priority in publishing a German translation. Such is the case with the following three works which have been announced in the Intelligence-papers annexed to the Jena Gazette, by several booksellers, now contending for the prior right of publication, viz. "*Haslam, on Insanity; Home, on Ulcers of the Legs; and Rollo, on the Diabetes Mellitus*." *Vide Jena Intelligenzblatt*: No. L. for April, 1799. p. 399.

We noticed in our first Number, p. 86, the extensive practice, importance, and utility of Mr. COLLIER's *new machines for percolation*, (applicable to all fluids, but more particularly WATER) for which he had obtained a Patent: we have now much satisfaction in adding, that on farther enquiry, we highly approve of these inventions, grounded on the only true principles that can shorten this process, which has hitherto been always found tedious to the extreme.

First, he removes the difficulty resulting from the clear fluid passing through its own impurities, by taking a direction from the external part of the filtering medium inwards, from which it is drawn off.

Secondly, an urged pressure is employed which speedily forces it through the percolating pores.

Thirdly, though the apparatus takes up comparatively no room, and the expence is very easy, it is so contrived as to contain more filtering surface in contact with the fluid, than a large stone does when full.

The method Mr. Collier has employed to deprive *any* quantity of fluid of its colour, or putrescent qualities, by a given quantity of charcoal, likewise highly ingenious.

Mr. SHERWIS

Mr. SHERWIN, of Enfield, intends to publish a work on the "Affections both morbid and salutary, excited in the human frame by external absorption.—In the year 1787, Mr. Sherwin communicated a paper on this subject to the Medical Society of London, a part of which, relating to the absorption of emetic tartar, was published in the second Volume of their Memoirs. In the introduction to that paper, which was not published by the Society, appears the following passage, which recent discoveries respecting the cow-pox render striking :

"May it not be conceived, that some particular unsuspected substance, applied to the human frame, in a state of moisture or effluvia, may be imbibed, and excite an infectious disorder, which shall afterwards propagate itself from one patient to another? Small-pox, measles, infectious sore throat, &c. may have been thus originally excited, though mankind may for ever be ignorant of their respective sources."

We learn that Mr. PARKINSON is about to enlarge his work of "*Medical Admonitions*," by the addition of a table, pointing out the degrees of danger manifested by various symptoms; and an Essay on the injurious consequences of the excessive indulgence of children.—Such a work is truly a desideratum in English literature, and cannot fail to be productive of the most beneficial effects, especially among those classes of society, which are prejudiced in favour of quackery.

At a quarterly meeting of the Royal College of Physicians, of Edinburgh, held on the 7th of May, Dr. GEORGE GAVIN BROWNE, Physician in Bath, and Dr. ALEXANDER WILSON, Physician in Montrose, were elected Fellows of the College; and Dr. ROBERT KENNEDY, Physician in Edinburgh, was admitted a Licentiate.

Dr. BRADLEY having been requested to postpone his summer-course of *Lectures on the Theory and Practice of Medicine*, till after the Hospital Lectures were concluded, proposes to commence on Monday the 10th of June, at the Lecture-room, No. 21, Great Eastcheap, near the Monument, at six in the evening.

The Course will consist of about seventy lectures.—Terms, three guineas.

Two works of Travels, both possessing much curious and original information, are now in the press, and will speedily be published. One is that of Mr. BROWNE, the African traveller, who has visited the interior parts of that extensive continent, which have hitherto been considered as *terra incognita*. We have seen a considerable part of this work, and can speak from conviction of its great merit, both in respect to novelty, and the useful information it contains.—The next publication is that by the celebrated naturalist and philologist, Dr. PALLAS, of St. Petersburg, whom the late Empress, with her usual munificence and liberality, sent to explore the *Southern Provinces of the Russian Empire*, in the years 1793 and 1794. These travels, the first volume of which is just published at Leipzig, will be comprised in two volumes, quarto, and embellished with near one hundred coloured plates and maps illustrative of the manners, dress, and customs of the various Tartar nations, and of different subjects relative to the *Natural History* and *Antiquities* of a tract of country extending to several thousand miles in length, and never before described.—A faithful translation of this splendid work, from the original German into the English language, will shortly appear, by Dr. Willich and Mr. S. Porter, of Trinity College,

College, Cambridge.—The English edition will (perhaps the first instance of 'the kind in this country) be ornamented with all the plates contained in the German, and re-engraved by the *original artist*, Mr. Geyssler, of Leipzig, who accompanied Dr. Pallas on his travels, and made also the drawings and designs.

A work which reflects credit on the author as well as the artist by whom the plates are executed, deserves particular notice in our Journal; and we have now to mention one which will, when completed, be the most comprehensive, correct, and practical system of anatomy ever attempted in this or any other country. We allude to the "*System of Dissections*," by Mr. CHARLES BELL, of Edinburgh (in folio); the third part of which is just published. It contains the dissections of the peritoneum; inferences drawn from views of the parts; the section of the pelvis; points of surgery illustrated by that section; the contents of the pelvis as seen from behind, and a plan of the arteries; of the descent of the testicle; of hernia, hydrocele, &c.—The fourth number of this elegant work, we understand, has already left the press at Edinburgh, and is on its way to London, where the work is publishing by Johnson, Callow, and other medical bookfellers.

In our first Number, p. 86, we mentioned the establishment of an American Mineralogical Society, in the city of New York; we are happy to announce a similar institution in this country, which promises to be of singular advantage.—Mr. W. H. Pepis, of the Poultry, London, has lately circulated printed proposals, in the character of Secretary to "THE BRITISH MINERALOGICAL SOCIETY," from which we extract the following particulars: They will analyze, *free of expence*, package and carriage excepted, for the proprietors of mines or landed estates, whatever substance they may meet with, in sufficient quantity, to render a knowledge of the component parts a desirable object. In return, the Society expects that singular or curious specimens of the mineral productions which may be met with in working the British mines, will be sent for the improvement of the Society's Cabinet, which will thus in time become a national ornament.

"When the analysis of any mineral sent for examination is completed, the result, with an account of the methods employed, will be sent to the proprietor of the specimen; and if it shall contain any new substance, the probable uses to which it may be applied, will be suggested."

Professor BLUMENBACH, of Goettingen, in his "*Observations on the bodily and mental capacity of Negroes*, *Magazin für das Neueste aus der Physik*, Vol. IV. states, that having had an opportunity of seeing and conversing with many negroes, and procured for his collection a great many anatomical preparations from negro bodies, he is from thence, and what he has read in different voyages, convinced of the truth of the following propositions: 1. That between one negro and another there is as much (if not more) difference in the colour, and particularly in the lineaments of the face, as between many real negroes, and other varieties of the human species: and 2. The negroes, in general, in regard to their mental faculties and capacity, are not inferior to the rest of the human race.

The fifth volume of the "*Memoirs of the Medical Society of London*" is, we understand, nearly printed; it is expected to appear in the beginning of next month.

# CRITICAL RETROSPECT

## OF

### MEDICAL AND PHYSICAL LITERATURE.

[FOREIGN AND DOMESTIC.]

#### COMPARATIVE ANATOMY.

*An Account of the Regular Gradation in Man, and in different Animals and Vegetables; and from the former to the latter: illustrated with engravings adapted to the subject.* By CHARLES WHITE. Read to the Literary and Philosophical Society of Manchester, at different meetings, in the year 1795. Quarto, 146 pages text, and seven sheets appendix. Three plates folio, and one quarto, 1799. (Price 10s. 6d.) London. Dilly.

THIS classical volume the author introduces with a modest advertisement, in which, among other professions testifying the candour and liberality of his sentiments, he requests the physiologists, "not to consider the present essay as a complete treatise on the subject, but only as a collection of hints and observations for the use of others who have leisure and opportunity to carry on the investigation."

The whole is divided into four parts; in the first of which the author treats of *gradation in general*, and after having made some ingenious observations on the genus of animals called *canis* by naturalists; on the *vespertilio*, or bat; on the *lemur*, or maucauco; on the *simia*, or apes; on the circumstance of America being inhabited by a race of animals unknown to the other Continent; on birds and their faculties or energies compared with the structure of their skulls and beaks—he draws the following inferences from the facts and observations before detailed:

"That there is a general gradation from man through the animal race; from animals to vegetables, and through the whole vegetable system. By gradation, I mean the various degrees in the powers, faculties, and organization. The gradation from man to animals is not by one way; the person and actions descend to the orang-outang, but the voice to birds, as has been observed.

"That there are many quadrupeds, insects, birds, and fishes, which appear to be created for particular climates, and cannot live in any other.

"That many animals and vegetables exist in the old world, which were not found in the new one, when discovered by *Columbus*; and that there are many animals and vegetables found in the new world, which were never known in the old.

"Lastly, that those animals which were common to both worlds, were only to be met with in the northern hemisphere, in which the new and old world had probably communication near the north pole. These animals were about twenty-six in number."

In the second part of his work, the author treats of the *gradation of man in particular*: of the gradation of bones; the length of the ulna in skeletons; the length of the fore-arms of living Negroes and Europeans; the skulls of different nations; the facial line; the gradation of the cartilages, muscles, tendons, skin, hair, sweat, catamenia; the rankness of smell; the degrees of sensible heat; the duration of life; the size of the penis, testes, iterum, &c. &c. and from these multifarious reflections he deduces the following conclusions:

"1. That

" 1. That there are material differences in the corporeal organization of various classes of mankind.

" 2. Taking the European man as a standard of comparison, on the one hand, and the tribe of simiæ on the other; and, comparing the classes of mankind with the standards, and with each other, they may be so arranged as to form a pretty regular gradation, in respect to the differences in the bodily structure and economy, the European standing at the head, as being farthest removed from the brute creation.

" 3. That the African, more especially in those particulars in which he differs from the European, approaches to the ape.

" 4. That the following characteristics, which distinguish the African from the European, are the same, differing only in degree, which distinguish the ape from the European:

#### *In the System of the Bones.*

" The narrow and retreating forehead and hind-head; the flat bone of the nose; the great distance betwixt the nose and mouth; the small retreating chin; the facial line; the great distance betwixt the ear and the fore-part of the mouth; the small distance between the *foramen magnum* and the back of the head; the long and strong under jaw; the large bony sockets which contain the eyes, and the wide *meatus auditorius*; the long fore-arm; the flat foot, and the length, breadth, shape and position of the *os calcis*.

#### *In other Parts of the System.*

" The broad and flat cartilage of the nose; the small *gastrocnemii*, and large temporal muscles; the long *tendo achillis*; the thick skin and short woolly hair; the small brain; the long breasts of the females; the parts of generation; the paucity of different discharges; the rank smell; their manner of walking; the power of adaptation to a warm climate; their shorter period of life.

" 5. That different classes of men are not liable to all the diseases incident to mankind, and that they are infested with different insects.

" 6. That, in comparing the classes of mankind with each other, and with the brute creation, as in the second article, there is a gradation also discoverable in the senses of *seeing*, *hearing*, and *smelling*, in *memory*, and in the powers of *mastication*, but in a contrary order to that above stated, the European being the least perfect, the African more so, and the brutes most perfect of all, in these particulars."

In the third part of the work, the author takes a comparative view of the hair of different nations, and the wool of animals in different climates; and after observing that the hair in the human race was the same 1800 years ago as it is at present, concludes this section with the following result: "Perennial hair, annual hair, and wool, seem to be three distinct productions, essentially different from each other. Of the perennial hair, there are various species; as that upon the head of an European; that upon the chin; and other parts of the body. The hair of the Negro's head seems to be a different species from the European hair, and not a variety occasioned by any difference of climate, or from any peculiar mode of living, dependent on their want of civilization."

In the fourth and last part of the work, Mr. White speaks, at some length, of the colour or complexion of man. This highly interesting part of the subject, the author concludes with the following animated observations:

"Different species of men being once admitted, it will become a proper object of physiological inquiry to determine their number and distinction, with the merits, excellencies, and defects of each. In pursuing this inquiry,

inquiry, there is no doubt but gradation will afford the proper clue to direct us. What the number of species may be, is not, perhaps, easy to determine. The four quarters of the globe will each, probably, furnish us with at least one. In Africa, however, there seems to be more than one species; and perhaps the lowest degree of the human race resides there. I am inclined to think that hair, rather than colour, ought to guide us in that quarter; and that it is not the blackest inhabitants, but those with extremely short hair, and a most ungracious appearance, as the Hottentots, who may be reckoned the lowest on the scale of humanity. The Negro, the American, some of the Asiatic tribes, and the European, seem evidently to be different species.

"Ascending the line of gradation, we come at last to the white European; who, being most removed from the brute creation, may, on that account, be considered as the most beautiful of the human race. No one will doubt his superiority in intellectual powers; and I believe it will be found, that his capacity is naturally superior to that of every other man. Where shall we find, unless in the European, that nobly arched head containing such a quantity of brain, and supported by a hollow conical pillar, entering its centre? Where the perpendicular face, the prominent nose, and round projecting chin? Where that variety of features and fulness of expression; those long, flowing, graceful ringlets; that majestic beard; those rosy cheeks and coral lips? Where that erect posture of the body and noble gait? In what other quarter of the globe shall we find the blush that overspreads the soft features of the beautiful women of Europe; that emblem of modesty, of delicate feelings, and of sense? Where that nice expression of the amiable and softer passions in the countenance; and that general elegance of features and complexion? Where, except on the bosom of the European women, two such plump and snowy white hemispheres tipped with vermillion?"

In an 'Appendix,' the author has enriched this valuable publication with '*Detached Passages selected from Professor Soemmering's, Essay on the Comparative Anatomy (Corporeal difference, says the German title) of the Negro and the European;*' translated by DA HOLME. The whole is concluded with a few 'Notes,' by the author.

#### PRACTICE ON MEDICINE AND SURGERY.

*Medicina Nautica: an Essay on the Diseases of Seamen; with an Appendix containing Communications on the new Doctrine of Contagion and Yellow Fever, by American Physicians; transmitted to the Admiralty by Sir John Temple, Bart. his Majesty's Consul General.* Vol. II. By THOMAS TROTTER, M. D. Physician to his Majesty's Fleet, &c. London, (Price 7s. 6d.) Longman and Rees.

We have already announced this volume, and its important contents, in our first Number. p. 80.

In justice to the author, we shall first give an account of its particular contents, and then quote a few passages respecting the new doctrine of preventing and destroying contagion, by means of the nitrous vapour; on which subject we refer the reader to Dr. J. C. Smith's work, noticed in our second Number, p. 213.

After a short 'Introduction,' which principally relates to the establishment of a Medical Library, and the delivering of Clinical Lectures, at the Royal Hospitals of Hessel and Plymouth, Dr. Trotter furnishes us (from page 11 to 31) with a "*General Abstract of the State of Health in the Fleet for the years 1797 and 1798.*"

In



In the subsequent chapters (from page 32 to 266) the author treats of *Contagion; Yellow Fever; Small-pox; Epidemical Ophthalmia; on the Effects of Nitrous Acid in the Venereal Disease;—Miscellaneous Communications and Remarks; on Diet; the Malignant Ulcer; Experiments on the Nitrous Gas; several cases of Fractures; one of large Abscesses on the Thigh; and one of locked Jaw; communicated by different navy-surgeons.*

On the subject of destroying contagion, by means of fumigating ships and wards in hospitals with nitrous vapour, we extract the following severe animadversions:

"So absurd and inconsistent," says Dr. Trotter, "are prevailing opinions and habits of imitation, in particular affairs among mankind, that what is called a poison one day, may have the chance to be vended as an infallible remedy the day after. The sulphurated hydrogenous gas, when mixed with a proportion of carbonic acid gas, is no other than the aerial vapour produced from the explosion of combustion of gun-powder, which has been so long used in his Majesty's ships for the destruction of contagion. It affords an ample but lamentable proof of the wavering and imbecility of all human reasoning. Dr. Smith himself, we are very apt to believe, must have been strongly impressed with the dread of unfolding the weak sides of his doctrine, that he says nothing of the primitive principles of his nitrous gas. That must have soon reduced him to inexplicable difficulties; for he must have sought its constituent parts in the final decomposition of animal matter, by putrefaction; and after being involved from his pipkins, whether in ships or in hospitals, from its well-known elective attractions, he must have traced it through all its various degrees of oxygenation, till it became nitrous acid, without imparting a single quality of the air to support life; but on the contrary, to render it so much the worse, by the quantity it required to bring it to the state of an acid. P. 45 and 46.

"After all the latitude which the advocates for fumigation have thus given to its properties for purifying the air, and preventing diseases, it can certainly never be employed in *bellthy ships*, for any reason yet produced from experience, or from chemistry. In crowded situations, when the vital portion of the atmosphere is diminished by respiration, it can only be replenished by a fresh column from without, or by some process giving out oxygen. Nitrous gas, though possessing it in combination, cannot give it out under these circumstances; on the contrary, it tends still more to lessen the respirable portion, from its strong attraction for oxygen, which it greedily combines with to the point of saturation. This quality of nitrous gas has been so generally noticed by chemists, that it is employed every where as an eudiometer for measuring the purity of any given quantity of atmospheric air, and is, I believe, the ingenious invention of Dr. Priestly." P. 47.

A considerable part of this volume (from p. 276 to 471) is occupied with the 'Appendix,' which contains a summary of Dr. MITCHILL's doctrine relative to *pestilential fluids*, as displayed in his '*Defence of the Soap and Candle-makers*,' at New York, in March, 1797; and in the three *Dissertations on pestilential Fluids*; by Drs. SALTONSTALL, BAY, and LENT; the last of which we have noticed in our first Number, p. 98.—We regret that our limits will not admit of giving, at present, even a concise account of that ingenious *new doctrine*, but we shall endeavour to supply this deficiency on a future occasion; meanwhile, the reader is referred to a summary of its principles contained in a paper entitled, '*Outlines of Medical Geography*,' by Dr. Mitchill, inserted in our third Number, from p. 254 to 259.

*Essays*

*Essays on the Venereal Diseases and its concomitant Affections*: By WILLIAM BLAIR, A. M. Surgeon of the Lock Hospital, Finsbury Dispensary, &c. first part of the first Essay. A new Edition, corrected. 8vo. 252 pp. 1799, (Price 4s.) London. Johnson.

In the Preface to this Edition, the author says: "The uncommon success of several surgeons in their late experience with the acid, (especially at the Woolwich Hospital) has induced me to select a few well marked examples of lues venerea, for the purpose of repeating my observations, and of discovering any error or defect there might possibly have been in my practice last year. But no alteration whatever has taken place in my opinion, in consequence of these renewed trials: I therefore still conclude that the advocates for the acid are greatly deceiving themselves, and that too little discrimination has been used in ascertaining the *real* merits of Mr. SCOTT'S plan. As a general substitute for mercury in the treatment of syphilis, it is certainly inadmissible. Its efficacy may be most depended on, in cases where a venereal taint is least capable of proof."

Our limits will not permit us to give any number of the cases in detail, nor do we think it necessary; as the author's opinion, formed from the result of these, and many others which he proposes shortly to publish, is given above; and as our readers could only judge of the truth of that opinion by a perusal of the whole number. The cases that struck us as the most decisive among Mr. Blair's own trials, principally in the Lock Hospital, on the primary symptoms of the disease, are, Case 2, p. 126, and C. 12, p. 139. On the secondary symptoms are, Case 6, p. 177; C. 13, p. 189; C. 23, p. 208; C. 9, p. 240; and C. 11, p. 249.

*Practical Observations on the Diseases of the Army in Jamaica, as they occurred between the years 1792 and 1797: on the situation, climate, and Diseases of that island; and on the most probable means of lessening mortality among the troops, and among Europeans in tropical climates.* By WILLIAM LEMPRIER, Apothecary to his Majesty's Forces. In 2 vol. 291 and 361 pages, 8vo. with eight folio tables. 1799. (Price 13s. boards.) London, Longman and Rees.

In a well written preface, the author apologizes (indeed without necessity) "for attempting to simplify this branch of medical knowledge, by minutely stating, in a plain, easy language, blended with no more theory than what is absolutely necessary to throw light on his remarks, the result of his observations, during a period of eleven years, constantly devoted to his Majesty's service in warm climates: the last six of these have been spent in the West Indies, where the author performed the duty of regimental-surgeon, and afterwards the more important office of superintending the military hospitals in Jamaica. When not called off by his military avocations, he also was engaged in a very extensive line of private practice in Spanish Town, at the time when the greatest sickness prevailed in Jamaica. From these opportunities he derived the observations which, with some diffidence, he now presents to the public eye."

This work appears to us well arranged, and replete with truly practical information. We regret that it is not consistent with our limited plan, to give a more particular account of its contents; and shall therefore point out, as particularly deserving the reader's attention, the eighth chapter of the first volume, '*On the prevention of sickness and mortality among his Majesty's troops stationed in the West Indies*;' and the eleventh chapter of the second volume, '*On the duties of the regimental surgeon, the attendance of the*

*sick, and the arrangement of hospitals in Jamaica.* On each of these topics, as far as relates to naval service, our correspondent, Mr. Henderson, has treated at some length, in the three preceding numbers of our Journal, pp. 91—96; 137—143; and 236—238; as well as in the present number, from p. 340—346. Yet we do not mean to insinuate that these important subjects are exhausted by either of these ingenious writers, or that there is not still ample room for the observation of others.

*Essay on the Causes, early Signs, and Prevention of Pulmonary Consumption:* for the use of Parents and Preceptors. By THOMAS BEDDOES, M. D. 8vo. 274 pp. (Price 5s.) 1799. Bristol, Cottle; London, Longman and Rees.

THE author prefaces this, 'Essay' with a *View of the Subject*, in which he observes, that nearly one-fourth of the deaths in the British islands is, by the bills of mortality, referred to consumption; an assertion which he endeavours to support by a table shewing the mortality, registered under the heads of *decline* and *consumption*, in one of the parishes at Bristol, where the population is about 10,000, from the year 1790 to the year 1796, being a term of seven years. According to this table, of 1511 persons, 683 are said to have died of consumption or decline: so that *nearly one-half* fell victims to that merciless disease.

In the next section of the Work, the author delivers the '*Plan of the Essay*,' from which we quote the following characteristic passages:

"In search of facts applicable in the sequel to my subject, I shall first engage in a brief inquiry concerning those countries and classes that enjoy more or less of exemption from consumption. Could a doctrine of exemption be established, it might furnish something useful, by way of moral. If we could discern the circumstances on which exemption depends, we should only have to adopt them as nearly as possible into our own conduct. On the other hand, if it shall appear that there are whole descriptions of persons more liable to the complaint, we may stand a chance of collecting from their history a lesson equally useful, concerning the habits to be avoided.

"I should, perhaps, have still longer delayed the publication of these papers, had I not supposed the lately ascertained means of cure (in some circumstances, at least of true consumption) likely to awaken curiosity to the whole subject. The situation of Europe has also its weight in urging me forward. Not only is *the night coming, when no man can work*, but I am apprehensive, likewise, that *the tempest is gathering, which may sweep away the workman together with his work*.

As we have already pointed out (p. 384 of the present Journal) the practical tendency of this volume, as far as relates to professional men, we shall at present only call the attention of the reader to its multifarious contents, viz.—On *Climate*—*West Indies*; *Portugal*; *Italy*; *Madeira*.—*Classes exempt*: *Butchers*; *Fish Wives*; *Sailors*; *Watermen*.—*Persons more liable to Phthisis*—*Animals consumptive*—(*Of the Death*)—*Scotland*—*General Inference*—*Particular Considerations*—*Of the Phthisical Exterior*—*The Blood-warm Bath*—*Cold Bath*—*Bed warmth*—*Cold Air*—*Cool Bath*—*Approach of Consumption*—*Cure of Consumption*.

*A Detection of the Fallacy of Dr. Hull's Defence of the Cæsarean Operation.*

By W. SIMMONS, Member of the Corporation of Surgeons in London, and Senior Surgeon to the Manchester Infirmary. 8vo. 103 pp. Manchester, Clarks; London, Vernor and Hood; Edinburgh, Creech.

IN our preceding Number, p. 308, & seq. we have given a short account of the author's late publication, intitled, "*Reflections on the propriety of performing*

forming the *Casarean Operation*," which, we are sorry to find, has given rise to the controversy now carried on between Mr. Simmons and Dr. Hull. We lament that this controversy is not conducted with that temper and decorum, which ought ever to accompany scientific inquiries.

*An Account of the Plague which raged at Moscow in 1771.* By CHARLES DE MERTENS, M. D. Translated from the French, with Notes. 8vo. 122 pp. 1799.

THIS treatise was originally written in Latin; a French translation of it was published in 1784, at Vienna; and the present translator informs us in the preface, that he has been induced to submit it to the attention of medical practitioners in this country, on account of the danger to which we are exposed, of importing the pestilential contagion from America, or from Turkey and the Levant. "No one," says he, "who is acquainted with the nature of that contagion, can deny the possibility of its importation from America into this country, either now or hereafter, by infected persons or infected merchandise. On the other hand, are we not threatened with a similar danger from the East? In executing the hostile operations, which are going forwards in the Mediterranean, it seems scarcely possible for our fleets and armies to keep clear of contagion. No nation was ever long engaged in a war with the Turks without taking the plague. In this respect they are as much to be dreaded by their friends as their foes. If in the present contest, Italy, France, and England escape this scourge, it will form an exception to past events, which all Europe must devoutly pray for."

*Traité des maladies des voies Urinaires, &c. A Treatise on diseases of the Urinary passages.* By P. J. DESAULT; extracted from the Chirurgical Journal, enlarged and published by XAV. BICHAT, 8vo. Paris. The widow Desault, No. 18, Cloître, Notre Dame, and Nicole, Rue du Bouloy.

THIS work is divided into two parts: the first treats of all the diseases connected with the urinary secretion—the second, of those relative to its excretion. The first part is divided into four chapters, in which diabetes, the suppression of urine, its corruption, and the urinary calculus, are successively treated of.

Jos. Frank has taken notice (*Ratio institut clinici, &c.*) of two species of diabetes, similar to those described by Dr. Rollo, the one insipid, the other saccharine. According to Dr. Frank, the causes of diabetes have a debilitating effect, directly and indirectly, and exhaust the vital principle, if we may judge from the cases of debauchees and libertines who are subject to that disorder. The celebrated Trenka, in his commentary on the diabetes, thinks that it is the effect of passion and terror. Lastly, Cullen supposes, that it proceeds from a want of assimilation, which is also the opinion of La Place, laid down in his work "*De vera diabetis causa in defectu assimilationis quærenda*," Goettingen, 1784. From all these opinions, Dr. Frank suspects that diabetes proceeds from a local affection accompanied with general debility, and prefers in the cure of it a stimulant treatment.

#### NOSOCLOGY.

*Divisone delle malattie fatte secondo principi del sistema de Brown.—A Table of Diseases, arranged according to the Brunonian System.* By VALERIANO-LUIGI BRERA, Professor of Medicine at Pavia, 8vo. 40 pp. with a plate. Pavia.

THE system of Brown appears to have met with more zealous advocates in

in Italy, than it has done in France. This little tract is dedicated to Dr. Weikard, physician at Hailbron, one of the most ardent defenders the system has found in Germany, and is accompanied by tables of diseases according to Brown's plan. These tables are an improvement on those of Lynch, which were some time since added to the "Elements of Medicine," and consist of forty-five paragraphs, which Brera has explained by a "Dissertation."

The Brunonian system is too well known to professional men to need any explanation here. The tables, however, in the present work, will be found more perfect than any hitherto published, and well calculated for those who wish to compare other nosological systems with that of BROWN.

#### MATERIA MEDICA.

*Riflessioni medico-pratiche sull' uso interno del fosforo, particolarmente nell' emiplegia—Medico-practical Reflexions on the internal use of Phosphorus, particularly in hemiplegia.* By VALERIANO-LUIGI BRERA, 8vo. pp. 46. Pavia.

THIS dissertation is dedicated to the Society of Medicine at Paris. It appears that the author prescribed the internal use of phosphorus in a case of hemiplegia, and that so far from succeeding, it was attended with the most fatal consequences. Indeed he candidly confesses, that relying on the observations of others, he had the mortification of witnessing the death of the person to whom it was administered, although he had given it with the utmost precaution; and it is certain his want of success could not be attributed to temerity, inadvertence, or ignorance of the remedy employed.

Professor Brera then relates his own observations, as well as those of several other physicians, and gives a short history of the hemiplegia before mentioned—The body on dissection did not offer the smallest trace of gangrene; but a gas escaped from the stomach resembling a white vapour, and smelling like garlick, which caught fire on the approach of a taper. The coats of the stomach were not in the least inflamed; the intestinal canal was, however, a little contracted, and some red spots were observed on the intestines. It appeared that the two first grains administered by the mouth produced the death of the patient; and that those administered by glisters were not attended with any ill consequences. The author concludes by expressing his surprise at any physician recommending the use of so dreadful a remedy.\*

The work, upon the whole, possesses much information on a very interesting subject, and well deserves the attention of professional men.

#### THE VETERINARY ART.

*Memoria sull' attuale epidemia de Gatti. Memoir on the Epidemic raging among Cats,* by VALERIANO LUIGI BRERA, Professor of Medicine. 4to. 26.pp. Pavia.

THIS ingenious memoir on the diseases of a very useful domestic animal, is addressed to the central administration of the department of Pisa; and contains

\* For further information relative to the internal use of phosphorus, we refer the reader to our third Number, p. 283 and foll.

contains a series of observations well deserving the attention of those who wish to investigate, with precision, the epidemics which have often been noticed among them, in this country, particularly during the last year.

The author gives the following accurate description of the malady, as observed by him, at Pavia.

"The cat when first attacked becomes weak, heavy, and unquiet: it avoids the sight of its master, conceals itself, refuses to eat or to drink, and is no longer attracted by the smell of valerian, marjoram, &c. of which it is generally so excessively fond. As the malady increases, the cat with difficulty supports itself on its paws: its hair becomes erect, its tail droops, its eyes lose their lustre, and the abdomen becomes disordered; it makes vain efforts to vomit, and at length sinks under the disease.

From these symptoms, Brera concludes that the malady is a nervous fever, which, although dangerous, is nevertheless curable. Dissections afforded us no morbid appearances, but some livid spots on the bladder, and the gall-bladder dilated and filled with very black bile, the ordinary effect of nervous complaints; nor could he find any trace of worms, from which he concludes that the disease is derived from the air. Valerian, marjoram, &c. dissolved in wine, and alum, garlick, &c. in spirits, were found extremely beneficial in the cure of the disease. As preventive means, he recommends "the killing of the animals infected, and burying them in deep pits; the purification of the air in the apartments where any have died; the administration of a more than ordinary quantity of nutritive food, and the exposing them to fumigations of vinegar."

The work, upon the whole, contains much valuable information; and the purring tribe, which has already found a Homer in Mr. Desherbier, has now an Esculapius in Dr. Brera.

*Annals of Medicine, for the Year 1798, exhibiting a concise View of the latest and most important Discoveries in Medicine and Medical Philosophy.*

By ANDREW DUNCAN, Sen. M. D. and ANDREW DUNCAN, Jun. M. D. Fellows of the Royal College of Physicians, Edinburgh. Vol. III. 556 pp. 1799. (Price 7s. boards) *Edinburgh, Mudie; London, Robinsons; and Hamburg, Perthes.*

The learned authors of these 'Annals' have, as usual, divided the work into four distinct sections. In the former of these they give an 'Analysis' of twenty-three medical books, among which, the first by Dr. Currie, on the effects of water as a remedy in fever; the sixth by Von Humbolt, on stimulated muscular and nervous fibres; the ninth by Professor Soemmering, on the organ of the soul; and the nineteenth by Mr. Thomas Brown, (a promising young philosopher) on the Zoonomia, appear to us the most conspicuous and interesting.

The second section of the volume before us is intitled, 'Medical Observations,' and contains an account of nine different publications on various medical and chirurgical cases, each of which deserves a place in this collection.

The third section is devoted to 'Medical News,' from which we have already extracted an article of a practical tendency, in our second Number, p. 184.

The fourth section furnishes us with a 'List of New Books' which have appeared during the year 1798, on subjects of medicine, surgery, natural history, and other branches of medical science.

*Briefe*

*Briefs eines Arztes, &c.—Letters of a Physician, on Subjects of Medicine and Politics.* By G. WARDENBERG. Vol. 1. Part 1. 8vo. 270 pp. 1798. Göttingen, Schroeder.

These 'Letters' contain but a small portion of important political matter, but they abound in medical and chirurgical remarks of an useful tendency. During his occasional residence at Paris, or while travelling with the French armies, from May 1796, to September 1797, the author has collected a number of valuable facts relative to the state of the healing art, as well as the medical jurisprudence of France. His observations, however, would have been better entitled to praise, had they been arranged on a more scientific plan. Nevertheless, considered upon the whole, his contributions form a valuable acquisition to the modern history of Medicine.

The author, in conformity with other intelligent medical travellers, considers the prevailing distinction between the practice of medicine and surgery as one of the greatest obstacles to the progress of the healing art; a distinction remarkable prevalent, and more injurious in France than in any other country\*.

*Travels in England, Scotland, and the Hebrides; undertaken for the purpose of examining the State of the Arts, the Sciences, the Natural History, and Manners in Great Britain: Containing Mineralogical Descriptions of the Country round New Castle; of the Mountains of Derbysbire; of the Environs of Edinburgh, Glasgow, Perth, and St. Andrew's; of Inverary, and other Parts of Argylesbire; and of the Cave of Fingal.* In two Volumes with Plates. Translated from the French of B. FAUJAS SAINT FOND, Member of the National Institute, and Professor of Geology, in the Museum of Natural History at Paris. 8vo. 361 and 352 pages. (Price Fourteen Shillings, Boards) London. Ridgway.

These interesting 'Travels' contain a large fund of useful and truly practical information, particularly on subjects of natural history, and the state of the arts in this country. What renders this work still more valuable to the English reader, is the animated and apparently impartial sketches of many eminent characters, to whom our learned traveller had the good fortune to be introduced, and of whom he generally speaks in grateful and handsome terms. Of this description are, Sir Joseph Banks, Dr. Whitehurst, M. Cavallo, Dr. Lettison, J. Sheldon, W. Herichel, Sir Henry Inglefield, Dr. Swedianer, Mr. M'Donald, of Sky, Mr. M'Lean, of Torloisk, Messrs. M'Comie, and M'Gregor, of Perth, the late Principal. Dr. Robertson, Dr. Adam Smith, Dr. Black, Dr. Cullen, Dr. Henry, and several other gentlemen of Manchester; Dr. Pearson, Dr. Withering, Mr. Benjamin Watt, and Dr. Priestley.

As we propose to extract from these Travels, which abound in useful remarks, whatever has a *practical tendency*, in future numbers of our Journal under the head of 'Medical and Physical Intelligence,' we shall at present only observe, that we have seldom perused a similar work with equal satisfaction, or left it with similar regret.

*Précis d'Observations, &c.—A Summary Account of the principal Hot Mineral Springs of the Higher Pyrennees, particularly those of St. Saviour, with Cases of Cures.* By Cit. FABAS. 8vo. Paris.

The author begins with a description of the Mineral Springs of St. Saviour, one of which he states to be of the temperature of 29° of Reaumur's thermometer. He next proceeds to inquire into the causes of the heat of such springs,

\* Vide our first Number, p. 81, and foll.

Spring, and enumerates the principal medicinal properties of the mineral waters of the Pyrennees, and the volatile substance they contain, particularly those of St. Saviour. These last, as the author shews from a number of cases, act as *vulnery detergents*, antispasmodics, lithontriptics, depuratives, &c.

*Explication des mots d'usage en Anatomie et Chirurgie, &c.—An Explanation of the terms used in Anatomy and Surgery: with a general table of diseases, of operations, instruments, and medicines.* By Cit. ALLOUEL, 12mo. 360 pp. (2 livres 75 cent.) Paris, Remont.

We find in this work a new plan respecting the articulations of the bones; some remarks on different points relative to ligaments and cartilages; and reflections on the luxation of the humerus, and the rupture of the *bursa mucosa*.

*Redenvaering, &c.—A Discourse delivered at the opening of the Society of Medicine and Surgery, lately established at Antwerp.* By PIERRE ETIENNE, KOK, M. D. 8vo. 51 pp. Antwerp. Schaeffels.

The motto of this infant society is, '*Occidit qui non servata*; perhaps the converse of the proposition would be fully as applicable.—'*Servat qui non occidit*.' Be this as it may, Dr. Kok has here published an excellent inaugural discourse, which contains, 1. A succinct History of Medical Science; 2. An Inquiry into the duties of a physician; the practical design of the society's motto; and 4. An earnest exhortation to every citizen to concur in promoting the salutary and benevolent purposes of a society, instituted for the advancement of medicine, surgery, and the obstetric art.

### *New Medical and Physical Publications, in May.*

Account of the regular Gradation in Man, and in different animals and vegetables, and from the former to the latter. By Charles White. 4to. 10s. 6d. boards. Dilly.

Remarks on Mr. John Bell's Anatomy of the Heart and Arteries. 2s. 6d. Robinson.

Practical Observations on the Diseases of the Army in Jamaica, as they occurred between the years 1792 and 1797. And on the means of lessening mortality among the troops, and among Europeans in Tropical climates. By William Lemprriere, apothecary to the forces. 2 vols. 13s. boards. Longman and Rees.

Facts and Observations relative to the Nature and Origin of the Pestilential Fever, which prevailed in Philadelphia, in 1793, 1797, 1798. By the College of Physicians of Philadelphia. 9d. J. Phillips.

Further Observations on the Variolæ Vaccinæ, or Cow-pox. By Edward Jenner, M. D. 2s. 6d.

Reports of a Series of Inoculation, for the Variolæ Vaccinæ, or Cow-pox; with Remarks and Observations on the Disease considered as a substitute for the Small-pox. By William Woodville, M. D. &c. 8vo. 2s. 6d. Phillips and Son.

An Essay on the most rational means of preserving Health. With Anecdotes of Longevity. 3s. boards. Wallis.

The Physician's Vade Mecum, by the Rev. Joseph Townsend. Fifth Edition. 4s. H. D. Symonds.

An Essay on the Causes, Early Signs, and Prevention of Pulmonary Consumption, for the use of Parents and Preceptors. By Thomas Beddoes, M. D. 5s. boards. Longman and Rees.

Advice to Commanders of His Majesty's Fleet serving in the West Indies, on the preservation of the health of seamen, by Leonard Gillispie, M. D. Surgeon to the Naval Hospital, Fort-Royal, Martinico. 1s. Cuthell.

Essays on the Venereal Disease and its concomitant affections; by William Blair, A. M. and first part of the first Essay. A new edition, corrected. Four Shillings. Johnson.



A Detection of the Fallacy of Dr. Hull's Defence of the Cæsarean Operation: by *W. Simmons*, &c. 8vo. Manchester. 2s. 6d. Vernor and Hood.

The new Illustration of the Sexual System of Linæus. By *Robert John Thornton*. M. D. No. 1, to be continued every three months, and completed in 14 Numbers, 1l. 1s. each. H. D. Symonds.

#### NEW MEDICAL PUBLICATIONS IN GERMANY.

*Guter Rath an Muetter*, &c. Good Advice to Mothers, on the most important Points of the Physical Education of Children, in the first years of life. By Dr. C. W. *Hufeland*, &c. 8vo. 86 pp. *Berlin*. Rottmann.

*Einige wohlgemeinte Vorschläge*, &c. Some well intended Proposals for establishing a Medical College, on the most solid and perfect basis. (A satirical Oration.)

*Der Philosophische Arzt*.—The Medical Philosopher. By Dr. *Weikard*. Two Vols. 8vo.

—*Versuche*, &c.—Experiments on the irritability of Muscular and Nervous Fibres, Vol. II. 8vo. *Berlin*. Rottmann.

—*Anatomische Beschreibung*, &c.—An Anatomical Description of the external Parts of the human Eye, particularly of the lachrymal Vessels. Translated from the Latin of Dr. J. C. *Rosenmüller*; with Additions and Improvements by the Author, 4to. with coloured Plates, (Price in Sheets, 6 Dollars, Sax. Curr.) *Leipzig*. Linke.

—*Abhandlung*, &c. A Treatise on various Diseases, which originally arise from Acrimony; such as various Cutaneous Affections, Schrophula, Syphilis, Tettors, Cancer, and Gout; together with the Method of Cure, and the most approved Prescriptions. By Dr. J. V. *Müller*. A new Edition, improved. *Leipzig*. Jaeger.

#### NEW MEDICAL PUBLICATIONS IN FRANCE.

*Extrait de la Partie Medicale des Memoires de l' Institut National*, &c.—An Extract of the Medical Department of the Transactions of the National Institute for the fourth year of the French Republic. Vol. I. No. 4. *Paris*. Baudoin.

*Traite des Maladies des Voies Urinaires*, &c.—A Treatise on the Disorders of the Urinary Passages. By P. J. *Desault*, extracted from the Journal of Surgery, enlarged and published by *Xav. Bichat*. 8vo. *Paris*, Veuve Desault, Cloitre, Notre Dame.

*Recherches sur quelques Points d' Histoire de la Medicine*, &c.—Inquiries respecting some Particulars of the History of Medicine, concerning Inoculation. By *Citizens Bourdau*, 12mo. 590 pp. (3 Livres 25 Cent.) *Paris*. Remont.

*Le Medecin des Goutteux*, &c. The Gouty Man's Physician. By L. *Bodin*, 8vo. (1 Livre 50 Cent.) *Paris*. Croullebois.

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#### TO CORRESPONDENTS.

We have again been obliged to postpone several valuable papers, on account of their late arrival. We acknowledge the favours received, under the following signatures, viz. from T. P. of Alcester; G. C. of Kidderminster; W. V. of Rochester; C. B. of Hatton Garden; and S. H. of the Strand:—If our room permit, they shall be inserted in the next Number. We repeat our former request, that Correspondents may add the date of their letters, and their respective designations.

THE  
*Medical and Physical Journal.*

VOL. I.]

JULY, 1799.

[NO. V.]

*To the Editors of the Medical and Physical Journal.*

IT was my intention to have given you a detail of several particulars respecting the cow-pox; but various occurrences have prevented me, at present, from saying more on the subject, than what follows:

In my "Reports of Inoculation, for the Cow-pox," published last month, it appears that more than one-half of the patients had pustules; I have, however observed, that the result would probably have been more favourable, if the matter used for communicating the infection, had been taken from those only, in whom the disease proved to be very mild.

My subsequent experience has now enabled me to say, that this opinion has been confirmed; or that the disease in its progress from patient to patient, has actually become much milder. For out of 310 cases of cow-pox, which have been since under my care, only 39 had pustules that suppurated; viz. out of the first 100, 19 had pustules; out of the second 13; and out of the last 110, only 7 had pustules. This information I deem of considerable importance, as it leads to a conclusion widely different from that published in the "Reports."

ELY-PLACE, June 13, 1799.

W. WOODVILLE.

*To the Editors of the Medical and Physical Journal.*

AS your Journal embraces every object connected with medical science, I hope the following observations, though only pertaining to the history of medical literature, will find a place in your next Number.

R. LUBBOCK.

No person can feel a more lively sense of the value of MAYOW's writings than myself; and with that feeling I was induced, in a former Number of your Review, to add to the few names quoted by Dr. Yeats, many others, of great respectability, proving that, soon after the publication of Mayow's writings, they strongly arrested the attention of the learned in different parts of Europe, and met with as general a diffusion, as ever happened to any work marked with equal originality.

Dr. Yeats has admitted, that Mayow's writings in a few years after their publication, were quoted by many authors; but his zeal for the rights of

NUMBER V.

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Mayow

Mayow, which is, in many respects very meritorious, has led him into some erroneous conclusions; and more particularly when he infers, that during Mayow's life-time, his doctrine was mentioned by no author; when he indirectly accuses LOWER and THRUSTON of want of candour, in not quoting him; and when he says, that the authors quoting him, after his death, have many of them mistaken his opinions, by not making a distinction between fire-air particles, and nitre, properly so called.

It is with much pleasure that I now inform Dr. Yeats, that Mayow was gratified with observing the progress of his discoveries in Europe, during his life-time; for I find upon a more minute inquiry, that the dissertation on respiration, entitled "*Abstrusam respirationis humanæ negotium, &c.*" published under the auspices of Etmuller, and which I formerly quoted from the edition of his works, printed after his death, 1697, was first published at Leipzig, in quarto, 1676, which period was two years after the appearance of the complete edition of Mayow's works. Oxon. 1674; and three years before his death, 1679.—I quote this dissertation with the greater pleasure, as I have met with no work, containing so full an examination of Mayow's opinions on respiration, as well as of the opinions of Bartholin, Malpighi, Swammerdam, Thruston, and others; and of the truth of which I am of opinion every medical reader will be convinced by its perusal: and, as Etmuller filled a professional chair at Leipzig, it is more than probable, that in his lectures he detailed and examined the opinions of Mayow on different subjects with those of other authors.

I might here repeat Mundy's name, who, I have no doubt, mentions Mayow, in his works printed at Oxford, 1680, a year after Mayow's death; and for whose authority Dr. Yeats would have felt more respect, had he, with more leisure, examined his chapter on contagion, as well as some other parts of his work.

Dr. Yeats having said, in a note to his work, although I believe erroneously, that Lower's treatise upon the heart was published many years before Mayow wrote, it is difficult for me to conceive on what ground he censures Lower for not citing him. And believing, as I do, that Lower's work appeared for the first time, 1699, the year after the publication of the first edition of Mayow's Treatise on Respiration, 1668, and granting Lower's work subsequent to Mayow's by a year, and when the latter was only known, by his treatise upon respiration and upon the rickets,—I see not why the duty of citation should attach to Lower. His experiments and inquiries must have been carried on and finished without the knowledge of Mayow's proceedings, and the sending them into the world, supported only by their intrinsic merits, was the act of a mind the most ingenious, yet feeling the exclusive right to its own independent labours and exertions.

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How far Dr. Yeats is warranted in complaining of Thruston, for not mentioning the name of Mayow, in his Diatribe, will appear from his own statement. It is admitted by Dr. Yeats, that Thruston's work was first made public, in 1664, as a thesis, before a crowded audience, at Cambridge, and that his principles were generally known by the learned, either by conversation, or by a manuscript copy; for, as Dr. Yeats has observed, he expresses his obligations to Hook and Lower, for confirming his doctrine by their experiments; and, at the same time, complains of others, who had publicly attacked it, without mentioning his name. To prove also, how generally Thruston's opinions were known, before his work was in print, it may be observed, that NEEDHAM wrote a letter of congratulation to Thruston, upon finding that his 'Diatribe' was about to be printed; and also that Sir GEORGE ENT, the first Physiologist of the age, wrote his *Animadversiones* upon Thruston's work, and had them published with the first edition of it, 1670.—It appears from this statement, that Thruston's opinions, although not in print, were very generally known among the learned, and of course Mayow could be no stranger to them; and as they were made public in 1664, four years before Mayow printed his 'Tracts on Respiration and the Rickets', it is natural to conclude from these facts, in opposition to Dr. Yeats, that the duty of citation attached to Mayow; and that, instead of Thruston quoting Mayow, Mayow should have mentioned Thruston. This inference seems to spring necessarily from the above facts; and in his 'Epistle to the Reader,' Thruston seems to refer to some persons, and perhaps to Mayow, who had anticipated, if not borrowed his opinions; for, in speaking of his work, he says, "amist illa quidem fortassis aliquam novitatis gratiam, quâ se olim suis auditoribus, aliisque commendaverit, quainque interim aliorum scripta, vel merita sur vel ambierunt."

Neither can I subscribe to the opinion of Dr. Yeats, that CONNOR and TABOR, by the terms *nitrum aëreum*, and *nitrum aëris*, have not made the distinction between fire-air particles, and nitre as such; by these terms, they mean only a principle that air possesses in common with nitre; and Mayow himself makes use of the terms *nitrum aëreum*, *particula nitro-aërea*, & *spiritus nitro-aëreus*, indifferently, and as synonyms; and upon the same ground, according to the modern chemical nomenclature, when oxygen is said to be the principle of acidity, and common to the nitrous and other acids, and to the air, it might be argued, that its nature is not understood, the air exhibiting no sensible traces of acidity.

NORWICH, June 12, 1799.

*A remarkable Case of Petechiæ, unaccompanied by Fever.*

[Communicated by J. F. DAVIS, M. D. of Bath.]

THE publication of extraordinary cases is not, perhaps, of so much utility as is generally imagined; for since they rarely occur, the information communicated cannot be of extensive advantage. A successful mode of treating one common disease, exceeds in value the detail of many curious and uncommon complaints. It belongs to science, however, to amuse, as well as to instruct mankind. With this view I have drawn up the following case, which, though not entirely new \*, contains some striking peculiarities:—

Monday, March 11th, I was desired by Mr. GOLDSTONE, surgeon in this city, to visit a boy labouring under a peculiar disease, which he considered as partaking very much of the nature of scurvy. The whole surface of his body was covered with light red, purple, and blackish spots, from the smallest size possible to that of a pea. They did not appear to be thicker on one part than on another. The arms were covered with them, like the body, but there were not many on the legs; on these, however, and on one of the arms, were larger spots, of a livid hue, commonly known by the name of vibices. That on the hand, his parents attributed to a bruise, which he had received before his illness; but as they could not account for those on the legs, it seems probable that they arose from a different cause. His gums bled profusely, and were in a very putrid state. Respiration was quick and laborious, and his breath extremely offensive; urine natural; bowels costive, there having been no stool for two days; he was sensible, but could not speak. It was evident that he could not live long; he died in the evening. I learned from his friends, that the eruption appeared first on Sunday, 13th of February, but that he continued to follow his usual occupation till the 3d of March, complaining only of being weaker than formerly. The spots had during this period increased in size. He was then seized with shivering, which was not followed by any perceptible fever. After that he coughed frequently, and blood was discharged from the lungs. On Friday, March 8th, he vomited near a quart of grumous blood, and his stomach was thereby much relieved from an oppression which had been extremely painful to him. Afterwards he discharged from his stomach, at different times, lumps of the same kind, but in smaller quantity.

In my endeavours to discover the cause of this strange appearance, great difficulties have occurred. The boy had not lived on food which was likely

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\* See Withers, on the Asthma, p. 422.—Duncan's Cases and Observations, p. 90.—Memoirs of the Medical Society of London, Vol. IV.—Monthly Review, for 1796, Vol. XLX. p. 478.

to occasion such a disease. He served a confectioner, and was fed with a variety of flesh and wholesome food. He slept at home, and though the house (his parents being poor) was small and dirty, he was not more exposed to danger on this account than his brothers, who bore on their cheeks the ruddy hue of health. I found that he had been much employed in the ice-house, and had frequently complained of the intense cold to which he was exposed in that situation. Could cold, together with damp and foul air, which abounds in those places, have produced the disease under consideration? Writers on scurvy admit that cold has considerable influence in the production of that disease, for *cæteris paribus*, it is much more common in cold than in warm climates. Cold moreover occasions an appearance on the hands and faces of children who have been long exposed to it, that it denotes a state of the capillaries approaching to that which takes place in petechiæ. No one, I believe, will deny that pure air is necessary to a healthy state of the blood.

Petechiæ, as a symptom of fever is well known; but as an idiopathic disease, proving fatal, \* they are, I believe, extremely rare—so rare, indeed, that Dr. CULLEN has the following remark:—"Cum in quibusdam febribus, vel intermittentibus, vel continuis, in quibusvis etiam exanthematis et profluviiis, modo in iis morbis fit quædam ad putredinem proclivitas, apparent petechiæ; has pro efflorescentia symptomatica, potius quam pro exanthemate idiopathico habere voluit." In this case they were certainly not symptomatic of fever. It bears a very near relation to scurvy, but some circumstances prove the difference.

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*To the Editors of the Medical and Physical Journal.*

IN the third Number of your very interesting Journal, is a proposal for a new method of removing *steatomatous tumours*, by Professor WIMMER; who, in my opinion, is deservedly entitled to commendation for his ingenious treatment of them.

Whatever tends to diminish the *hazard*, or even the *trouble* of an operation, ought certainly to be strictly consulted by the surgeon; and, as tumours of this nature are not *unfrequently* so situated, as to be extirpated by the knife with *some degree* of danger, any other mode of removing them is certainly desirable.

I hope the following case may not be deemed unworthy a page in your Journal,

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\* In the cases to which I have before alluded, a cure was effected by means of bark, wipe, and acids. The subject of my case did not seek relief, till it was too late. The most judicious plan of treatment was nevertheless employed by the surgeon who attended.

Journal, as it may probably be in some measure instrumental to the furtherance of that method of treatment, which I conceive will be found successful in most cases of similar nature.

About five weeks since I was desired to examine a tumour, which had been eighteen years situated on the abdomen, immediately over the left rectus muscle, at its *half intersection* below the umbilicus.

It palpably contained fat, and appeared to weigh rather more than a pound. The man wished for its extirpation by the knife; but, after perusing your Journal, I thought it a fair case for a seton. I accordingly passed one through its middle, and in the course of three days considerable inflammation ensued, terminating in the sphacelous sloughing of the whole tumour, — so that in twelve days from the introduction of the seton, nothing remained but a trifling induration, which readily yielded to the *ung. hydrarg.*

I am very far from expecting this case to be a sufficient warrant for the adoption of a similar treatment in all tumours of sciatomatous nature; nor do I think the knife ought to be withheld in those instances where it can be used with impunity. Still, however, I am inclined to believe, that the treatment by seton will very frequently succeed; and wherever the state of the patient's strength is sufficient to undergo the process of *sphacelous separation*, it ought frequently to be practised.

HIGHAM FERRERS, June 12, 1799.

THOMAS PECK.

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*To the Conductors of the Medical and Physical Journal.*

I HAVE taken the liberty of sending you the inclosed account of the *deleterious effects of the lolium, or darnel*, which, if you should think worthy of insertion in your useful publication, it is my wish, that it may be so; at the same time I have to lament, that the progress of the poison was not taken down so minutely as it would have been, had I at the time entertained the least thought of its being exhibited to the public eye, but the authenticity of the facts may be depended on. It is also a circumstance of some concern to me, that it should not have fallen to the lot of some person, possessing greater abilities than myself, to have noticed the fact, that darnel produces effects extremely inimical to the animal economy; but as I entertain great hopes that the present hints may call forth those abilities, I consider it a duty incumbent on me, to mention the following, among many others that have occurred in the course of a practice of a few years in a partnership at Highworth, Wilts, with my brother-in-law, Mr. POWELL, to whom I am obliged for the successful mode pursued in several cases; and as in the northern part of the county of Wilts, the darnel much abounds, and the poorer class eat it with that part of the corn called *tarling corn*, I have hopes

hopes that a more successful mode of treatment may be devised, which may save a numerous and well-deserving part of the community from great pain and torture.

PLYMOUTH-DOCK, June 12, 1799. RICHARD MARSH,  
Surgeon, (2d Wilts. Militia.)

In the month of September a sack of leaved wheat with an equal quantity of tarding wheat, (*i. e.* the refuse feeds which pass the sieve) abounding very much with darnel (*lolium*), which by the generality of people, where the plant is much known, is called *cheal*, were ground and dressed to ether, and in the evening about ten o'clock, bread was made of a part of it. Of this bread, JAMES EDMONDS, about thirty-three years of age, and Robert his son, aged thirteen, eat the next morning about three o'clock; at five (two hours after), James became sick and giddy, vomited and purged much, felt pain and tightness in the calves of his legs, was confined at home the whole day, but on the following day was so far recovered, as to be able to resume his work. Robert eat, during the day, about a pound and a half of this bread, and at night on his return from his work, he eat more of the same; he felt giddy, and had pain of the head during the whole of the first day, with great pain and tightness of the legs, especially of the calves of the legs, extending to the ankles, attended with redness and swelling, and itching of the skin, but it did not vomit or purge him till the third day. James, eleven years old—John, three—and Elizabeth four,—all partook of this bread the following morning about nine o'clock. They soon became giddy, were sick, vomited and purged greatly, their legs became painful, felt excessive tight, were swelled, inflamed, and itched much, and continued in that state eight or nine days, when the symptoms gradually disappeared, producing in one of them only (James) a small collection of a gelatinous fluid, in the inside of the foot. But with Robert, who eat with his father at three o'clock in the morning, and also in the evening, and who was not vomited and purged till the third day, the pain and inflammation continued to increase, till it terminated in gangrene: sphacelous succeeded, and he was under the necessity of suffering amputation of both legs. Very little general fever accompanied this till the latter stage of the disease, which it is presumed, was the effect of absorption. The remedies made use of in this case (and that too without any sensible advantage) were, in the beginning, evacuants; in the latter stage, camphor and bark, with the use of spirituous fomentations and antiseptic cataplasms. It should however be remarked, that this poor family lived at seven or eight miles from medical assistance, and therefore they were not attended till two or three days after their attack.

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In several cases which have since occurred, as soon as the legs became painful, attended with inflammation and swelling, scarifications were made of considerable length and depth; which, with evacuations in the very first stage, and afterwards large doses of camphor, with nitre and opium occasionally, have been attended with success.

It may perhaps be worthy of notice, to remark that this plant seems to have produced more deleterious effects when eaten quite new and warm, which was the case with James and Robert, at three o'clock in the morning; and there is no doubt but the father would have suffered equally with the son, had it not so soon been thrown off the stomach. There is also another circumstance to be noticed, which is, that all the patients I have seen have universally complained of violent pain in the calves of their legs, and expressing their pain nearly similar, viz. as though their calves were very tightly bound with cords.

*To the Editors of the Medical and Physical Journal.*

IF you think the following cases worthy of a place in your miscellany, I shall be happy to see them in your next Number.

DUDLEY, June 9th, 1799.

THOMAS WAINWRIGHT.

WILLIAM PHILLIPS, in the fortieth year of his age, was attacked with insanity, which continued two years. From the time of the recovery of his faculties, he complained of pain in the thyroid gland, with cough, a husky voice, and difficulty of breathing.—This gland was enlarged and sore when handled too freely. The difficulty of respiration very much resembled what takes place on the croup: the sound was like that of air drawn through a straitened passage. After some weeks the respiration became very laborious; the pulse at this time was small, weak, frequent, and irregular. Loss of appetite and of sleep; great prostration of strength, restlessness, delirium, and convulsions closed the melancholy scene. The disease was evidently an inflammation of a part of the trachea. The repeated application of blisters and leeches to the seat of pain, and on which I had chiefly relied, availed nothing: in short no relief was obtained from the exhibition of medicine. The trachea being laid open after death, two pins without heads were found sticking, the one on the thyroid, and the other in the cricoid cartilage, opposed to each other, in an horizontal direction\*. The trachea was much inflamed and ulceration had taken place round each pin. The ulceration had penetrated through the substance of the thyroid cartilage; the point of the pin

\* Mr. PHILLIPS, of Saville-House, Leicester-square, has a drawing of the trachea, with the pins in it.

pin pressing against a vesication which had arisen on the skin of the throat, a few hours before the patient's death, the second pin was working its way by ulceration through the cricoid cartilage into the œsophagus. His friends could now recollect, that the deceased had, when insane, been in the habit of swallowing pieces of iron, &c. and a mark was pointed out on the skin of the abdomen, where it was said an iron skewer, which he had swallowed, had ulcerated through. Had the pin, which stuck in the thyroid cartilage, been the only one, I believe that the patient might have survived, and that the pin would have escaped through the ulcerated opening, completed a few hours before his death, by the vesication.

If the cause of this extraordinary disease had been found out, and vomiting, coughing, and sneezing, artificially excited, had failed to dislodge the pins, a longitudinal incision might have been made into the trachea, and the pins extracted by the forceps or the finger. A lady of my acquaintance has a cicatrix on the skin of the throat, occasioned by the use of caustic, which succeeded in opening a passage for a pin, which had got into the trachea. How had the pins got into this patient's throat?—Had he, as they were without heads, thrust them externally through the integuments?—or were they swallowed, and accidentally slipped into the trachea?—or had they ulcerated into the trachea from the œsophagus? The second opinion is, perhaps, the most probable. It happened to a boy cracking nuts, that the shell of one slipped into the trachea: his life was saved by a violent fit of coughing, which expelled the nut-shell. A girl was brought into St. Thomas's hospital, in 1791 or 92, who was said to have swallowed a cockle-shell. The whale-bone and sponge were repeatedly applied to no purpose: an obscure resistance was thought to be felt in one part of the œsophagus. She died; and, upon dissection, the cockle-shell was found in the trachea. The parts were preserved, and are, I believe, in the collection of Mr. ASHLEY COOPER. A man, who had died suddenly in the street, was carried into St. Thomas's; his death was found to have been occasioned by a piece of cheese having slipped into the trachea. There are grounds to suspect two other cases of disease in the trachea, which terminated fatally, to have arisen from some extraneous body having fallen into it. Both were females: the one I attended nearly through the whole period of the disease. The symptoms were similar to those in the case of W. P. The remedies employed were of little, or rather of no service. The other case occurred after the death of W. P. and the narration of the case led me to believe, that in this instance the disease originated from a pin having got into the trachea. This patient was in a dying state when I saw her. Permission to examine the trachea after death could not be obtained in either of these cases. There was evidently, in both, inflammation and ulceration of a peculiar species in the trachea, differing totally from can-

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cer; and from the very prevalent custom, with the lower class of women, of putting pins into their mouths, there is some probability that one had slipped into the trachea.

In the Medical Museum, vol. 2. p. 496, three cases are related, where extraneous substances had got into the trachea. The first, of a plumb-stone, discharged from the trachea by a violent cough, excited by the exhibition of a very acrid and stimulating remedy. In the second case, a pea was expelled by the emetic effect of a large dose of oil. And a bone was discharged from the trachea in the third case, by violent sneezing, from snuffing powder of the lily of the valley into the nostrils.

### STATE OF DISEASES IN LONDON.

*Account of Diseases in an Eastern District of London, from the 20th of May to the 20th of June.*

ACUTE DISEASES.		No. of Cases.		No. of Cases.	
Peripneumonia Notha	-	2	Pyrosis	-	1
Intermittent Fever	-	1	Enterodunia	-	4
Typhus Mitior	-	4	Procidencia Vaginæ	-	2
Scarlatina	-	1	Hæmorrhoids	-	3
Ophthalmia	-	3	Diarrhœa	-	2
Acute Rheumatism	-	2	Obstipatio	-	3
CHRONIC DISEASES.			Dysuria	-	6
Cough	-	6	Hysteria	-	4
Dyspnœa	-	3	Hypochondriasis	-	3
Cough and Dyspnœa	-	7	Palpitation of the Heart	-	2
Phthisis Pulmonalis	-	8	Tremor	-	1
Hæmoptoe	-	3	Scrofula	-	4
Hoarseness	-	2	Herpes	-	4
Pleurodynæ	-	3	Tinea	-	3
Hydrothorax	-	2	Chronic Rheumatism	-	10
Ascites	-	3	Gout	-	2
Anasarca	-	2	PUERPERAL DISEASES.		
Ophthalmia	-	1	Menorrhagia Lochialis	-	4
Cephalalgia	-	6	Enuresis	-	2
Hemicrania	-	1	Stranguria	-	3
Paralysis	-	2	Mastrodynia	-	7
Hemiplegia	-	1	INFANTILE DISEASES.		
Epistaxis	-	2	Convulsio	-	2
Gastrodynia	-	7	Ophthalmia	-	3
Dyspepsia	-	6	Apthæ	-	3
Vomitus	-	3	Herpetic Eruptions	-	4

A considerable change in the state of the weather having taken place since the last report, the number of diseases depending upon it has been diminished; the wind, however, still continuing to blow from the East and North-east, complaints of the chest still continue to harass many patients, though the number of recent instances is much smaller.

Cases

Cases of ophthalmia, a disease particularly noticed in the last month, are still numerous; owing, probably, to the state of the weather just referred to.

An instance of pyrosis having presented itself, and it being a disease of rare occurrence, we embrace the opportunity of taking some notice of it. This disease, though in some of its symptoms it bears near resemblance to other morbid affections of the stomach, as dyspepsia, gastrodynia, cardialgia, is particularly characterized by the frequent eructation of a watery, insipid fluid, on which account it is distinguished in Scotland by the name of water brash. This eructation is generally preceded by pain in the region of the organ, accompanied with a sense of stricture, which has occasioned its being ranked by nosologists amongst spasmodic diseases. This complaint in some instances returns periodically, and generally in the morning or forenoon, when the stomach is empty. The patient complains of pain, attended with a sense of heat, similar to what is called the heart-burn; the stomach is suddenly provoked to throw up its contents, and a thin watery fluid is discharged.

It has been observed, that this disease more frequently attacks the female than the male, and that a state of pregnancy renders the patient more liable to the attack. It is commonly found amongst the lower classes of society, and has been attributed to a farinaceous diet. In the instance referred to in the list, there were symptoms of too liberal a use of spirituous liquors.

As the pathology of the disease is not very well understood, so the properest mode of treatment has not been ascertained.

The symptoms are palliated by the use of opium, considerable effects have been attributed to the nux vomica; and it has been asserted, that the chewing of tobacco has proved beneficial.

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*Diseases admitted as In and Out Patients of the Physicians of the Westminster Hospital, between the 20th of May and the 20th of June.*

	No. of Cases.		No. of Cases.
Fever	13	Erysipelas	4
Ague	2	Hæmoptoe	1
Amenorrhœa	9	Hæmorrhœia	2
Anasarca	2	Hypochondriasis	1
Ascites	2	Hysteria	1
Asthenia	4	Hydrocephalus	1
Asthma	2	Impetigo	2
Catarrh	2	Itch	7
Colic	1	Lepa Græcorum	1
Cough	10	Leucorrhœa	4
Cephalœa	2	Menorrhagia	2
Diarrhœa	4	Phthisis	1
Dyspepsia	3	Paralysis	2
Euterodynia	3	Pleurisy	4
	3 C 2		Podagra

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	No. of Cases.		No. of Cases.
Podagra	1	Urticaria	2
Rheumatism	11	Vertigo	3
Struma	2	Vomiting	2
Tinea	2	Worms	3

Fevers and pulmonic affections have become more frequent in this part of the town, during the last month, than in any preceding part of the spring. The fever prevalent at present differs considerably from the typhus of the cold months; and appears already to be modified by the state of the bile.

T. B.

## *List of Diseases from the 20th of May to the 20th of June; being the Result of the Public and Private Practice of a Physician at the West End of the Town.*

ACUTE DISEASES.		No. of Cases.		No. of Cases.
Measles	11	Epilepsy	2	
Whooping-cough	3	Chorea	1	
Scarlatina	2	Paralysis	2	
Catarrh	8	Dyspepsia	11	
Acute Rheumatism	6	Gastrodynia	7	
Inflammatory Sore-throat	4	Enterodynia	5	
Pneumonic Inflammation	4	Bilious vomiting and Diarrhoea	12	
Peritoneal Inflammation	3	Jaundice	3	
Volvulus	1	Chlorosis	4	
Ophthalmia	3	Menorrhagia	8	
Erysipelas	2	Abortion	3	
Synochus, or Summer Fever	6	Amenorrhœa	4	
Contagious malignant Fever	6	Fluor Albus	3	
Apoplexy	2	Emanatio	2	
Epistaxis	3	Scirrhus Uteri	1	
Hæmoptoe	4	Scirrhus of the Liver	2	
Hæmatemesis	2	Dropsy	3	
Intestinal Hæmorrhagy	2	Scrofula	6	
Renal Hæmorrhagy	2	Tabes Mesenterica	4	
Tertian	1	Hydrocephalus	1	
Hæctica	3	Worms	3	
Child-bed and Milk Fevers	3	Hæmorrhoids	2	
Acute Diseases of Infants	12	Prolapsus Ani	1	
CHRONIC DISEASES.		Scaly Tetter	4	
Asthénia	43	Nettle-rash	1	
Cough and Dyspnœa	31	Pompholyx	1	
Chronic Rheumatism	20	Impetigo	3	
Lumbago and Sciatica	7	Ecthyma	2	
Pleurodyne	4	Itch and Grattelle	12	
Pulmonary Consumption	12	Gutta Rosacea	4	
Cephalœa	6	Porriço	3	

The series of incongruous complaints stated in the above list, is an usual effect, in our climate, of hot sun-shine, struggling with the piercing east and north-east winds, which mostly prevail from the commencement of spring, till

*Dr. Rollo, on the Means of destroying the Virus of Ulcers, &c. 429*

till the summer solstice. Indeed the diseases of winter, spring, and summer, seem to have been crowded together within the last six weeks; and must have fully enabled the faculty to meet the payment of the income-tax.

Among *contagious epidemic* disorders, the measles have lately taken the lead; but from an inspection of the list it will appear, that *inflammatory* and  *hæmorrhagic* complaints formed the most extensive set of acute diseases; the latter series being particularly violent and obstinate, and in many instances fatal. Thus far we can sympathize in this peaceful island; with the unhappy sufferers on the plains of Italy and Helvetia: but as the above stated diseases of our fellow-citizens will probably be terminated by the *æsthenic languor* of July: so we will hope, the *almost paralytic æsthenia* of our enemies may prevent the further effusions of blood on the continent, and be the means of restoring health, peace, and happiness, to all the nations of Europe.

R. W.

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*On the Means of destroying the Virus of Ulcers, and Contagious Miasmata.*

[Extracted from Dr. ROLLO's "Treatise on the Diabetes Mellitus;" and the "Annales de Chimie," No. 86 and 87.]

IN our preceding Number we gave a plate representing the apparatus for applying gases, or facitious air, to wounds, which was properly designed for the present Number; but from accidental mistake of the engraver, as well as those who superintend the stitching, this plate has been misplaced. At present, therefore, we shall supply the explanation before omitted, and accompany it with a concise account of this improvement.

Cit. GUITON introduces this interesting memoir, in the 86th Number of the "Annales de Chimie," with the following liberal remark: "the manner in which Dr. ROLLO treats this subject, makes it a branch of that extensive and hitherto unexplored science, animal chemistry; and affords us new hopes (as Dr. Rollo observes) of seeing the resources of medicine and surgery increased, by a practical application of the doctrine of pneumatic chemistry.

"Dr. Rollo examines the action of morbid matter on wounds. Independent of the ulcers which usually follow erysipelas, and of those which are known by the name of hospital ulcers, he believes he has observed a particular species proceeding from a deleterious germ which attaches to a part of the wound; which, like other poisons, possesses the property of *assimilation*, increasing by its own progressive virulence; but which does not affect other ulcers of a specific character, such as the venereal, scrophulous, and variolous.

"Dr.

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“ Dr. Rollo has endeavoured to destroy this morbid poison by chemical means, locally applied; for this purpose he made use of the oxygenated muriatic acid, the nitrates of silver and mercury, and the oxygenated muriatic acid gas. The manner of applying these substances is as follows:—the wound ought first to be washed with luke-warm water; immediately after which the ulcerated part should be touched with the nitrat of silver; the wound then must be moistened with a solution of the nitrat of mercury diluted with water, or a mixture of oxygenated muriatic acid and distilled water; after which, the whole is to be covered with linen dipped in one or the other of these liquids. The oxygenated muriatic gas is immediately directed to the ulcer, and the diluted solution of the nitrat of mercury is, as before prescribed, applied to the wound. By this treatment the wound soon becomes cicatrized:—this experiment has failed only in cases where the ulceration was so extensive that it could not be entirely covered with the nitrat of silver, or the oxygenated muriatic acid gas.

“ One of these ulcers, after having been dusted with a considerable quantity of the nitrate of silver reduced to a fine powder, appeared to be in an excellent condition, twelve hours after this dressing; it was firm, and apparently much revived; an effect which must have been produced by the sulphurated hydrogen gas acting on the surface of the ulcer.”

Dr. Rollo gives an account of some experiments published by Dr. Crawford, in the 80th volume of the “ *Philosophical Transactions*,” on the matter of cancer; and expresses his regret, that this valuable paper is not more generally known: as, says he, “ *there can be little doubt of chemical changes and combinations being produced on sores.*” Dr. Rollo farther observes, “ that this subject has not been carried on, since then, as it ought to have been; trusting it will gradually appear of great importance, especially as the discovery of the changes the discharge of a sore undergoes, will probably point out, at the same time, the remedy for the sore.”—*A Treatise on the Diabetes Mellitus*: Edit. first. Vol. II. p. 268.

Before, however, we can proceed to give the result of Dr. Crawford's ingenious experiments, together with the opinions of this eminent medical philosopher, we shall previously furnish the reader with a concise explanation of the plate mentioned in the beginning of this paper, and which has been misplaced to our preceding Number.

*Description of the Plate affixed to No. IV.*

A, (Fig. 3) is a glass bottle, or decanter, designed to contain the materials necessary to produce the gas. B, a vial, or small flask, intended to contain the acid, and which allows it to pass, at pleasure, into the decanter A, by means of the cock C.

D, is

D, is a glass tube which serves to conduct the gas, and to the extremity of which, marked E, a bladder must be fixed. Of the smaller spherical glass vessel, with a straight and curved tube, we find no explanation in the "*Annales de Chimie*;" and although it is there stated, that Mr. BLADES, of Ludgate-Hill, London, sells this apparatus, yet, upon application at the warehouse we learnt, that the latter vessel does not form a part of his contrivance.

The bladder is used only, when the gas is to be applied for a certain length of time, and in order to keep it uniformly distended with facility, by renewing the effervescence as occasion may require. As to the oxygenated muriatic acid gas, its effect is very quick, or almost instantaneous, so that it is only necessary to apply the orifice of the tube to the wound, for a few seconds.

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Dr. Crawford concludes his experimental inquiry into the nature of cancerous matter, with the following important observations :

"It appears from the experiments which have been recited, that in cancerous and other malignant ulcers, the animal fibres undergo nearly the same changes which are produced in them by destructive distillation. The purulent matter prepared for the purpose of healing the ulcer is, in such cases, mixed with animal air and volatile alkali. The compound formed by the union of these substances, which may perhaps not improperly be termed hepatised ammonia, decomposes metallic salts, and acts upon metals; for we have seen that when it was placed in a jar over mercury for several days, the surface of the mercury acquired a black colour, and that it instantly occasioned a dark precipitate in a solution of nitrated silver. These facts seem to afford an explanation of the changes produced in metallic salts, when they are applied to malignant ulcers. The volatile alkali combines with the acid of the metallic salt, and the animal hepatic air revives the metal, either by imparting to it the inflammable principle, or by uniting with the pure air which the salt is supposed to contain. The metal, thus revived, is probably in some cases again corroded by the hepatised ammonia, which communicates to it a black colour. Thus we may account for the dark incrustation frequently formed upon the tongue and internal fauces, when venereal ulcers of the throat are washed with a solution of corrosive sublimate. And hence also the dark tinge which is frequently communicated by ill-conditioned ulcers to poultices made with a solution of sugar of lead. The action of the hepatised ammonia likewise explains the reason why the probes are frequently corroded when they are introduced into sinuous ulcers, or applied to the surfaces of carious bones. To the same cause it is probably



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probably owing, that polished metallic vessels are quickly tarnished when they are exposed to the effluvia of putrid animal substances.

“ From the foregoing experiments it moreover appears, that animal hepatic air imparts to the fat of animals recently killed a green colour; that it renders the muscular fibres soft and flaccid, and increases the tendency to putrefaction. It is therefore a septic principle; and hence it is extremely probable, that the compound of this fluid with volatile alkali, which is found in the matter discharged by the open cancer, produces deleterious effects: for although the mischief in cancerous ulcers seems principally to depend on a morbid action of the vessels, whence the unhealthy state of the matter discharged by such ulcers is supposed to derive its origin, yet, from the corrosion of the larger blood-vessels, and the obstruction in the contiguous glands, there can be little doubt that this matter aggravates the disease. The experiments recited above appear to prove, that the hepatized ammonia is the ingredient which communicates to the cancerous matter its putrid smell, its greater thinness, and in a word, all the peculiar properties by which it differs from healthy pus.

“ From these considerations it was inferred, that a medicine which would decompose the hepatized ammonia, and destroy the fetor of the animal hepatic air, without at the same time increasing the morbid action of the vessels, would be productive of salutary effects. The nitrous acid does not destroy the fetor of hepatic air, unless it be highly concentrated; and in this state it is well known that it speedily corrodes animal substances. But the fetor of hepatic air quickly disappears when it is mixed with the dephlogisticated marine acid, even though the latter be so much diluted with water to render it a very mild application. I have found that this acid, diluted with thrice its weight of water, gives but little pain when it is applied to ulcers that are not very irritable; and in several cases of cancer it appeared to correct the fetor, and to produce a thicker and more healthy pus. It is proper, however, to remark, that other cases occurred in which it did not seem to be attended with the same salutary effects. Indeed some cancerous ulcers are so extremely irritable, that applications which are at all of a stimulating nature, cannot be ventured upon with safety. And hence, if the observations which I have made on the efficacy of this acid as an external application, should be confirmed by future experience, it must be left to the judgment of the surgeon to determine both the degree of its dilution, and the cases in which it may be employed with advantage.

“ The dephlogisticated marine acid, as is generally known, has the power of destroying the colour, the smell, and perhaps the taste, of the greater part of animal and vegetable substances. We have seen that it corrects the fetor of putrid flesh. And I have found, that when it is poured in sufficient quantity

tity upon hemlock and opium, these narcotics speedily lose their sensible qualities. As it appears, therefore, to possess the power of correcting the vegetable, and probably many of the animal poisons, it seemed not unlikely, that it might be useful as an internal medicine. Conceiving that its exhibition would be perfectly safe, I once took 20 drops of it, diluted with water. I soon afterwards, however, felt an obtuse pain, with a sense of constriction in my stomach and bowels. This uneasiness, notwithstanding the use of emetics and laxatives, lasted for several days, and was at length removed by drinking water impregnated with sulphureous hepatic air. I afterwards found that the manganese, which had been used in the distillation of the acid, contained a small portion of lead.

“ Dr. INGENHOUSZ informed me, that a Dutchman of his acquaintance, some time ago, drank a considerable quantity of the dephlogisticated marine acid: the effects which it produced were so extremely violent, that he narrowly escaped with his life. If, therefore, this acid should hereafter be employed as an internal medicine, it would be necessary to prepare it by means of manganese that has been previously separated, by a chemical process, from the lead and the other metals with which that substance is usually contaminated.”

This quotation has induced Dr. ROLLO to observe, that at his request, Mr. CUVIKSHANK made some experiments on the matter of this ore, and that the following account contains the result, with his remarks, as communicated to us in April 1795.

“ The matter of this ore is sparingly soluble in water, but readily diffused through it, producing a milky appearance. Pure volatile alkali first reduces it to a transparent jelly, and after some time dissolves the greatest part; a similar effect is produced on pure pus. These solutions are but partially precipitated by acids, particularly the sulphuric. The tincture of litmus, and of Brazil wood are not changed by this matter; it does not therefore possess either acid or alkaline properties. If to the filtered solution of this matter in distilled water, a little nitrated silver be added, a whitish-coloured precipitate will be produced. Similar precipitates, but much more copious, are occasioned by nitrated and muriated mercury. When pure pus is treated in the same manner, these precipitates, particularly that by muriated mercury, have somewhat of a different appearance, which it would be difficult to describe. The fetid smell is somewhat changed by lime-water, but not destroyed; the sulphuric acid rather increases it; a similar effect is produced by alcohol, and by the alkaline solution of arsenic. A decoction of the Peruvian Bark does not destroy the fetor. This, however, is effected by the nitrates and muriates of mercury, by the nitrous acid; but most completely by the oxygenated muriatic acid, and gas. Nitrated silver produces very little change either on its colour or smell, a circumstance the more remarkable, as this salt possesses the

property of destroying most offensive smells, even that of the matter of cancer.

" It must be allowed that the offensive smell of the matter of this sore is produced by that part of the discharge which is altered from the nature of pure pus; for we know that every ill-conditioned discharge has more or less smell, while good pus has none. It is a known fact in chemistry, admitting of few exceptions, that a substance cannot have its smell totally destroyed or altered, without having its properties changed at the same time. If therefore this peculiar matter, by the addition of nitrated or muriated mercury, the oxygenated muriatic acid, &c. should have its smell completely destroyed, there is every reason to believe that its peculiar properties also will be so; and should it be capable in its original state of producing an ill-conditioned action in sores, the addition of such substances might prevent this mischief. If it should be supposed therefore that an acrid matter somehow produced on the surface of sores, were capable of inducing ulceration of a specific kind, and that this ulceration, like the venereal, should generate more matter of a nature similar to itself, capable of extending the mischief, and even of bringing on a general affection of the system, some important conclusions might be drawn from these experiments.

" 1st. It is easy to see, that a sore once clean, might be preserved from the effects of the matter alluded to, by washing it at every dressing with a weak solution of nitrated mercury, or the oxygenated muriatic acid; and that even the generation of such matter might be entirely prevented by the same means.

" 2d. After the action has taken place, and before a general disposition is formed, it might be possible to put a stop to its progress by very active topical applications, such as should be capable not only of destroying the specific nature of the matter generated, but also the action itself. From the experiments already related, it is evident we would prefer in this case, the most active mercurial preparations, such as red precipitate not entirely deprived of its acid, or the muriated mercury; and if an actual caustic were to be employed, we should have recourse to the strong nitrous acid, applied in Mr. HUMPHAGE's method, rather than the nitrated silver, especially as it may have also the effect of changing the nature of the discharge; this consists in dipping a little lint in the acid, and applying it to the part: it communicates less pain than any other caustic, except the nitrate of silver.

" With regard to the action of the different substances on sores, and as caustics, they may be thus arranged:

" 1st. Substances exciting action, and producing death, in parts, by the excess of that action; as arsenic, and muriated mercury.

" 2d. Substances acting simply by burning or destroying the part, and whose actions are always limited; as, nitrated silver, nitrated mercury, and nitrous acid.

" 3d.

" 3d. Substances acting by dissolving the part, and whose action is so diffusive that it is difficultly limited; as, common caustic, or the mixture of potash and lime.

" 4th. Substances acting chemically on the part by decomposition; as, oxygenated muriatic acid, in the form of gas, or combined with water.

" On the whole, though we have supposed the formation of a new morbid poison, on the surface of certain sores, under peculiar circumstances or management, yet we are rather inclined to change the appellation *new*, to a poison which has been probably *overlooked*. We have seen the commencing ulceration remain some days stationary; we have seen it extending, while the other parts of the former sore were cicatrizing, and the constitutional effects not taking place until the ulceration had occupied a large part of the sore; and we have seen that the painful state and extreme sensibility did not occur until the system was affected. Therefore it may be presumed the early ulceration has been unattended to, and the state of the sore remarked only by authors after it had assumed the appearance of phagedæna. For when the ulceration had so spread as to produce the constitutional affection, and the consequent rapid changes on the sore, the character of the virulent sore described as phagedæna was formed.

" The account we have given of this sore may excite more attention to the state of a large sore in an hospital with a considerable discharge, and lead to a trial of the applications pointed out; to forward cicatrification, and prevent any untoward changes from the production of a poison on the surface of the sore.

" Since the attention and manner of treating sores as described, have been pursued in this hospital, we have had none such, nor even the hospital-sore; indeed this we cannot possibly have, as ventilation and the destruction of general contagion are so carefully and unremittingly performed. We have had, however, three very remarkable sores following bubo, in the groin, and chancre on the penis, which terminated fatally. These cases occurred before the adoption of the new remedies, and were treated by mercury, and appeared to be the effect of the mercurial disease on a peculiar constitution. The sores were irritable and sloughing, and the only favourable changes were produced by the use of opium, the hepatized ammonia, and the application to the sores of the hydrogenous, hepatic, and carbonic acid gases.

" The sore which has been described and noticed by us at the beginning of this account as peculiar to hospitals, though well marked by many, yet we have our doubts, but that many of these were this peculiar sore and owing to the poison we have suggested. Whatever it may be, it adds another fact in corroboration of the advantages both medicine and surgery are likely to derive from the new doctrines of chemistry.

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"We have already seen the utility of substances readily parting with their oxygen, applied to irritable sores, and also of the hydrogenous, hepatic, and carbonic acid gases to irritable sores. See Vol. I. p. 62, and which was contained in the Notes of the first cases of Diabetes, dispersed in January last. In p. 61 of the same volume, it is observed that the oxygenated muriatic gas was found to destroy the offensive smell of sores, that it destroyed specific contagion, and could be easily obtained, and very safely used. We had, therefore, given it in preference to other things, and in order that it may be more generally tried, we insert Mr. Cruikshank's manner of procuring and using it in the wards of this hospital.

"This consists in intimately mixing two parts of common salt, and one of crystallised manganese, previously reduced to powder. Two ounces of this compound are introduced into a small basin; about an ounce of water is then added, and afterwards an ounce and an half of the concentrated vitriolic or sulphuric acid at different times, so as to preserve a gradual discharge of the oxygenated muriatic acid gas. One of these basins is sufficient for a ward or room, containing five or six beds, and more must be employed according to the size of the apartment."

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*Historical Inquiry into the State of Medicine among the Hebrews: being an Inaugural Dissertation maintained by MEYER LEWIN, under the Presidency of Professor CURTIUS SPRENGEL, on the 19th November, 1798, in the University of HALLE.*

SEVERAL authors have attempted to give an account of the history of medicine among the Hebrews; but they in general attended more to inquiries relative to diseases mentioned in Sacred History, than to the history of the art itself. Few documents are to be found, which relate to the medicine of the Hebrews; in those histories of medicine by REY, FRIEND, and BLACK; or even in Professor SPRENGEL's general history of this science; some articles are scattered in this chapter on the medicine of the Egyptians, and in that on the medicine of the Eastern nation.

The sects of Platonists, and of Paracelsus, have, according to our author, derived their origin from Judaism; and the Hebrews have always adopted the manners and customs of other nations, notwithstanding the prohibitions laid on the people of Israel, against imitating the manners of the barbarians.

According to the doctrine of the Patriarchs, both good and evil came from God; invocation, or submission, were regarded as the only means of extirpating diseases. When the Hebrews were in Egypt, they found their established principles of medicine. By the order of Joseph, the Egyptian physicians embalmed the body of Jacob. Moses, who was acquainted with all the

the learning of the Egyptians, inserted that art in his code of medical and dietetic laws; he described the white leprosy with great exactness: he also appears to have made use of their superstitious recipes, by the erection of the brazen serpent. Already had he suppressed the Egyptian magicians, by prodigies more wonderful than theirs.

The tribe of Levi, at length assumed the practice of physic; the prophet attributed epidemic diseases to heavenly wrath. The Philistines, afflicted with leprous tumours, could not be cured till after the restitution of the ark. Even the sound of the harp of David, could allay the ravings of the maniac Saul. The science of Solomon, who was perhaps instructed by the Phenicians, or the Arabs, was extended still further. He was celebrated for his knowledge of plants and animals; and he also composed a treatise on the cure of diseases, which was suppressed by Ezekias, lest the sacred remedies which made the sacrifices of the tribe of Levi more praise-worthy, should be abandoned for other remedies. Solomon, also, if we may believe his writings, had the gift of assuaging diseases by incantation, and of driving out devils by exorcism, a practice which remained till the time of Josephus the historian. The prophets then assumed the practice of physic. The hand of Jeroboam was cured by a prophet, whom he had offended, and Elias restored the son of the widow of Zarephath. Elisha recovered the son of a Shunamite, and Naman cured a Syrian chief of the leprosy, by ordering him to be immersed in the river Jordan; Isaiah also restored Ezekias to life, by applying to his tumours a cataplasm of figs. About the year 640, before the Christian era, the Hebrews were dispersed in Medea and Assyria, and submitted to the king of Babylon. This was the epoch in which the religion of ZERDUSCH or ZOROASTER, began to spread. The exiled Hebrews combined many of his dogmas with those of their religion; this gave rise to the Kabbale, a sort of Eastern philosophy, which the Alexandrians at length combined with the superstitions of the Greeks. It was now that medicine began to assume another form. Among the good Genii, was one who watched over health; one of these was called Boete, he caused diseases; another named MAZDEJESNOIS, was empowered to try remedies on the people who were under the influence of the Dews, or evil demons.

During the reign of Cyrus, who subdued the kingdom of Babylon, the Greeks were enabled to learn the doctrine of Zoroaster, and appropriate it to their own uses. But this theory was not entirely derived from Zoroaster; it owed its origin to a more ancient prophet, named Ham; the author of this philosophy having collected its principals from among the Indians and Bramins; this account is affirmed by Professor Sprengel, not according to the futile arguments of WILFORD, or the ridiculous and contemptible calculations of JONES and KLAUVER, but from venerable monuments,

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numents, from books which surpass in antiquity any which we possess, and from the most exact astronomical calculations. The analogy of the system of the Bramins to that of Zoroaster, and the perspicuity which it has given to their ideas, clearly prove that it has passed from India to Media, and that it was not transported by Zoroaster and his disciples to the banks of the Indus. It teaches us that God is eternal, that he produced, before the most distant ages, three persons or substances, united in one; that is to say, earth, water, and fire, from which the whole army of angels (*devuta*) were created. The Indians reckon seven worlds, which are under the influence of either the good or evil principle: they adore the Sun, as being the symbol of good emanations; man, born on the good principle, if the soul be considered, but on the bad principle, as to what relates to the body, is enclosed in his own body that he may suffer pain; and when this body has undergone sufficient chastisement, the man becomes more pure, and approaches nearer to perfection. The Samaritans who, in a life of solitude and retirement, incessantly contemplating the Deity, abstained from the use of flesh. Such, in ancient times, were the true Indian Physicians.

This Oriental doctrine was transplanted into Media by Zoroaster, and from thence, in the time of Cyrus to Persia, where the exiled Jews, who were without temples and sacrifices, adopted an austere and contemplative life: thence it was, that MAGASTHENES, who lived in the time of SELEUCUS Nicator, has confounded the religion of the Indians with that of the Hebrews.

Amongst the principal tenets which the Hebrews have derived from Babylon, is that of the immortality of the soul; of which they do not appear to have had any previous information, and of which the first traces are to be found in the subsequent apocryphal books of DANIEL; hence originated their belief in the power of angels and demons, to produce or cure diseases.

At this period it was again necessary to resume the occult doctrine of the *mystic word of God* which is regarded as a personal illumination: this dogma arose from the philosophy of Zoroaster, and was thence introduced into the Jewish schools.

The Hebrew people, by their repeated captivity, had lost the knowledge of their primitive language, and could no longer read their laws in the Hebrew tongue. By order of ESDRAS, a Chaldaic paraphrase was corrected for the purpose of being read in the synagogue. Thus it appears that Esdras was the first who introduced the use of the Chaldaic language. At this period, MANASSES, chief of the sect of Samaritans, erected a temple upon Mount Garizin, in which he established a religion of the knowledge of which we have been almost deprived by the lapse of time: this was the

the origin of the Essians and Samaritans. The jews who, in the reign of JEREMIAH, had fled into Egypt, as well as those who were led thither by ARTAXERXES III. and PTOLEMY LAGUS, had a greater partiality for the philosophic doctrine of the Greeks of Alexandria than for the degenerated system of the platonists; the sophistry of the Alexandrians, their love of paradox, and their taste for divinity, were similar to their Oriental philosophy.

The latter sect derived its name from a Syrian word, which signifies *saint*: its first origin is discovered to have been in the time of JUDAS MACCABEUS. It is supposed, that the Essians of Syria, and those of Egypt, differed greatly in their opinions: the former followed more particularly the Eastern philosophy, and the latter that of Alexandria. These last were nominated *Therapeutians*, because they led a life of experiment and contemplation.

The Essians made a vow to respect their books as much as the names of angels. PHILO, who calls the second angel the great physician, does not deviate in any considerable degree from the system of the Essians.

This contemplative life of the Essians made a forcible impression on the minds of some, who, possessed by a religious phrenzy, pretended to be deranged in their intellects, until they had obtained what they wished for.—These enthusiasts met together frequently in Egypt: they abandoned their parents, their children, and their property; and lived in villages, assiduously reading the works of the prophets, so that even in their dreams, their imagination presented nothing but divine objects; they prayed twice every day; they never ate till after sun-set, devoting the day to the study of wisdom, the night to the reflection, and repose of the body:—their food was only bread, with salt, and hyssop; they religiously set apart the seventh day, when they met together at a frugal banquet, which was spread on leaves of the papyrus.

The author says, in another place, that there were of this sect in Egypt four thousand who never killed any animal, who avoided cities, rejected the arts and sciences, and contemned riches, but inculcated benevolence and hospitality; inasmuch that at length their manners became so pure, that the most cruel tyrants could never accuse them of the smallest crime.

The Essians and Syrians adopted principles rather different; according to them the soul, naturally immortal, was created to practice justice. They celebrated their festivals in common temples, and cultivated their fields without the aid of slaves, by mutually assisting each other: they selected the most exemplary for priests, who acted as collectors, and prepared their necessities; they abstained from oaths, practised sobriety, justice, and the religion of God; they were always habited in white, and kept continual silence for a year together, which rendered them similar to the Pythagoreans. They were looked upon as the primitive Christians; it is certain, at least,  
that



that they were the disciples of Moses, who had collected from the sacred writings of the Greeks, and Orientals, every thing that could excite the mind, and inspire a fanatical enthusiasm.

[Want of room will not permit us to extend the account of this article.]

*Facts and Observations relative to the external Application of Opium by Friction, so as to be absorbed by the Lymphatics.*

By M. WARD, Surgeon to the Manchester Infirmary.

IT appears to be not only a professional but a moral duty, to lay before the public; at an early period, improvements in the healing art, which are sufficiently well authenticated, and may be adopted by others, without impropriety or danger in similar cases. On this ground, I trust, the communication of the following facts and observations will be justified: and I am happy in being able to avail myself of the high authority of Mr. POTT; who, in his admirable tract on the mortification of the toes and feet, has thus sanctioned a novel mode of exhibiting opium. "If this was an experiment, in which the life, or limb, or health of the patient, was in any degree endangered, or by which the person on whom it may be tried, could in any degree be injured, I should have withheld what I now publish, until a greater length of time and more experience had rendered it still more absolutely certain; and I should have thought myself vindicable in so doing: but, as this is a medicine whose general effects are well known, and which is at the same time so capable of direction and management, that it is almost impossible for any person who deserves to be trusted with medicine at all to do any material harm with it, I thought it would be wrong and unjust to conceal what had occurred to me, lest I might thereby deprive the afflicted of an assistance which, I verily believe, is not to be obtained from any other quarter."\*

May 14, 1799, Mr. G. P. fourteen years of age, became delirious on or about the eleventh day from the commencement of typhus. Musk, opium, &c. were prescribed, both by myself, and afterwards by the advice of Dr. Percival, without his becoming composed or rational; except at intervals. On the contrary, the delirium increased till the seventeenth or eighteenth day, when he became extremely restless and turbulent, requiring two persons to keep him in bed. He continued in this state, till the evening of the twentieth or twenty-first day, when he seemed nearly exhausted. His feet were cold, his pulse weak and irregular, and he discharged his urine and stools involuntarily.

He

\* Earle's edition of Pott's Works, Vol. 3, p. 364.

He had taken  $5\frac{1}{2}$  grains of opium,  $\frac{1}{4}$  of musk, and the same of volatile salt in the last 48 hours: but could not now retain them on his stomach.

Not having an opportunity of consulting with Dr. Percival at that time, and not supposing it possible for our patient to live more than an hour or two unless a speedy change could be effected; I directed six grains of opium, very finely powdered, to be mixed with an ounce of lard, and to be divided into two equal parts: one of them to be rubbed on the inside of one leg, and the top of the foot, directly: and the other on the other leg and foot, in two or three hours afterwards. This practice was suggested to me, by an extract of a letter I had just met with, in Duncan's *Annals of Medicine* for 1798, from Vin. Chiarugi, Physician to the hospital of St. Boniface, at Florence, to Dr. L. Frank, on the effects of opium applied externally, in maniacal delirium, &c. This method of applying opium, was first proposed, I believe, by Dr. Chiarenti, of Florence.

It occurred to me, that as it had produced calmness and sleep in the instance mentioned by Dr. Chiarugi, it might probably have the same effect in a delirium arising from fever: and seeing our patient in so hopeless a state, I was the more anxious to try it on that account.

May 15. At ten A. M. I was surprized to find the patient better, and in a quiet comfortable sleep; and was informed that the attendants expected every gasp would have been his last, till four o'clock, (six hours after the first portion of ointment was rubbed in) when he became a little calmer, and grew gradually more so till eight; he then began to doze, and at nine fell into an easy sleep. Dr. P. and I visited him at twelve, and were pleased and surprized to find him still asleep.

At ten P. M. he was perfectly composed, and had slept from the time I last saw him till half past four, when he awoke, said he was hungry, and asked for some bread and butter, and tea: he then expressed a wish to have his bed made, sat up ten minutes, and ate an orange: and when removed to bed, fell asleep directly, and slept till eight; when he seemed uneasy, and had a slight return of the delirium. Six grains of opium were now rubbed in on one thigh, agreeably to the directions we had given. When the friction had been continued half an hour, he desired the nurse to desist, and fell asleep immediately. His pulse, which had hitherto varied from 100 to 120 was now only 80, but stronger.

May 16. At 5 A. M. Mr. P. came to tell me, his son had slept well till two; but was now restless and uneasy, and that he had used the last portion of the ointment.

Eight grains of opium, mixed with three drachms of lard, were directed to be rubbed in immediately.

Ten A. M. I was informed he could not bear the friction longer than

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eight or ten minutes. He was now restless but not delirious; pulse scarcely perceptible. Wine was prescribed. At twelve, Dr. P. found him in the same state, and prescribed tinct. opii. gr. xv. 4ta quaq. hora. At ten, P. M. he was easy and rational; but had not slept much; pulse 92, tongue much cleaner; skin cold. Nine grains of opium, mixed with three drachms of lard, were now ordered to be applied, and the same quantity to be repeated in four hours, unless he became composed.

May 17, twelve o'clock. The first portion of ointment only was applied; and he soon grew tired of the friction, so that very little could have been absorbed. I was aware of this being likely to happen, and therefore had ordered an increased quantity of opium. He was now calm and rational; but had not slept well. Pulse 100. Omit. ung.—Contin. tinct. opii. At eight, P. M. pulse 96; quite easy. Contin. tinct. opii.

May 18. Slept well last night; appetite improved; tongue clean; pulse 96, regular, and somewhat stronger.

May 20th. Sleeps well, and improves rapidly.

The quantity of opium applied externally was 35 grains, and this was rubbed on the legs and thighs, in the course of the lymphatics, at six different times in forty-eight hours; not in equal proportions, or at regular intervals; but whenever he began to grow uneasy.

The opium was powdered exceedingly fine.

This history I communicated to Dr. Percival; from whom I have since received the following cases and remarks; which I shall deliver in his own words.

“ The narrative you read to me this morning, I believe to be perfectly accurate; and I now send, agreeable to your request, a brief statement of the two cases I mentioned to you, in which opium was externally applied with much apparent benefit.

“ You have just claim to this communication; because it was from my being in some degree persuaded of the success of the practice you pursued in the instance of our patient, Mr. P. jun. that I was induced to adopt the same mode of treatment.

“ May 16, 1799. I was called to visit Mrs. ———, a lady about forty-six years of age, subject to epileptic fits, to anomalous gout, and to temporary mental derangement. I found her in a state of high delirium, without fever. Having remarked that, under similar circumstances, the internal exhibition of laudanum aggravated the affection of her head, probably by producing inebriation, I regarded this as a peculiarly favourable opportunity of trying the use of opium externally. I therefore directed three drachms of laudanum to be mixed with an equal quantity of olive oil, by the yolk of an egg, and to be diligently rubbed into the legs. The  
friction

friction was soothing and grateful to her; and, in a few hours, she was observed to become considerably calmer. The like inunction was repeated at night.

" May 17. I found her perfectly composed and rational. She had enjoyed much refreshing sleep. Her pulse was regular, her heat natural, and a gentle perspiration had taken place soon after the first inunction.

" The same plan was continued.

" May 18. She remained perfectly composed and rational. During the space of forty-eight hours, the inunction had been four times renewed. It was performed with due diligence and care; and the hand of the servant who rubbed in the liniment was covered with a smooth bladder.

" What proportion of the twelve drachms of laudanum, thus consumed, may be supposed to have been conveyed by absorption into the system?

" May 17, 1799. Mr. ———, a gentleman between thirty and forty years of age, of a delicate make, had been confined by low fever more than a week. Last night a delirium occurred, which progressively increased in violence; so that this morning I found him in a state of maniacal fury, yet with a languid pulse.

" A bolus of musk, volatile salt and opium, was prescribed. But the patient loudly and peremptorily refused not only medicine, but all sustenance. It became necessary to confine him by a strait waistcoat; and I directed his feet and legs to be well fomented. Three drachms of laudanum, mixed with a like proportion of olive oil, were afterwards rubbed into them. Within the space of five or six hours he grew more calm; and was prevailed upon to take nearly two glasses of wine.

" A repetition of the inunction was directed.

" May 18. The patient was in a state of tolerable composure. He had taken both wine and nutriment. The inunction had been thrice renewed; but, as it had not produced much sleep, I directed fifteen drops of laudanum to be administered every four or five hours, in coffee, of which he said he was fond of, and which conceals the taste of opium better than any other vehicle. The inunction was discontinued.

" May 19. The patient had enjoyed sound and refreshing sleep; and awoke in the morning almost perfectly rational, with a considerable abatement of every symptom of fever."

*Additions to Dr. PERCIVAL's Communication.*

" In the introduction of new modes of treatment, it is incumbent on the medical practitioner, to be sedulously cautious, not only that he founds his trials on just analogies, but that he conducts them with impartiality, and records, with faithfulness, their good or ill success.

444 *Mr. Ward, on the Application of Opium by Friction.*

"The apparently happy effects of opium in the case of Mr. P. and in the two others which I have just related, led a physician of this town to conceive, that he should derive benefit from its external application, under a severe head-ache. To this malady he is often incident; and when he has recourse to laudanum for its relief, he generally experiences great subsequent nausea, vertigo, and nervous debility. Being attacked with violent pain above the left eye, where the frontal ramus of the nervus ophthalmicus spreads itself, he had the whole forehead repeatedly rubbed with the following ointment.

"*Rj. Opii. purif. gr. x. camphor. gr. v.*

"*Ung. Adipis. Suillæ, unc. ss. M.*

"The camphor dissolves the opium, and renders the composition so smooth, as to fit it for absorption.

"At first the unction, which was applied to a sufficiently large surface, the fore part of the head being bald, seemed to soothe and to assuage the pain. But this comfortable effect soon ceased: the head-ache continued, increased, and terminated only at the usual period.

"The disappointment in this instance ought not, perhaps, to discourage a further trial of the ointment, at the commencement of my friend's next fit of head-ache. But the remedy is more likely to be successful, if the ointment be carefully rubbed on the inside of the legs and thighs, where the lymphatics are far more numerous than on any part of the head. This distribution of the absorbents, may give particular efficacy to the anodyne inunction in painful menstruation, to which those females are generally most liable, who suffer extreme faintness, languor, and sickness, from taking opium in the usual forms of its exhibition. And in the mortification of the toes, described by Mr. Pott, the same application is highly worthy of a trial, in conjunction with the internal use of laudanum: for, as opium appears to possess, in some degree, a specific action in this disease, the more fully the system can be imbrued with it, without producing stupor, or injuring the energy of the brain, the greater likelihood there must be of arresting the progress of this direful disorder. In a case, about which I was not long since consulted, I observed the gangrene extended itself in streaks up the inside of the leg, along the course of the absorbents. If this method of treatment had then occurred to my mind, I should not have hesitated to recommend its adoption."

Being impressed with the apparently beneficial effects produced by opium applied externally, in three of the instances above related, I felt a strong inclination to adopt the same practice, in a case of chronic rheumatism of seven months continuance, which had not yielded to the usual plans of treatment,

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My principal view in this trial was, that it might probably prove a substitute for the pulv. ipec. comp. which the patient had tried to wean herself from several times, but in vain, although it had been highly injurious to her general health.

Were this point gained, I was in hopes she would then be able to take a more generous diet, and tonics; without which her recovery could not be expected.—The following is a brief statement of the principal occurrences:

" May 21, 1790, Mary Caldwell, aged 34, was attacked with lumbago and sciatica, in November last; she was much debilitated and emaciated at that time, by a long continuance of menorrhagia. I was called to visit her about three months since, and found her in a very reduced state, having had very little easy sleep for some time. She obtained temporary relief from pulv. ipec. comp. and topical applications, and has continued to take a dose of the powder almost every night, to the present time; not being able to obtain either ease or rest without it. Bark, tincture of guaiacum, and calomel in small doses were of no service, and she continued to decline in her general health, being much harassed with pain and flatulence in her bowels, costiveness, and sickness. Pul. rhei. and kali vitriolatum, were added to the powders, but seemed to hinder their anodyne and sordorific effects. Aperient medicines of different kinds were given; but the relief procured by them was of short duration.

" The powders were ordered to be discontinued, and six grains of opium, mixed with three drachms of lard, to be rubbed on the inside of one thigh for thirty or forty minutes at bed-time.

" May 22. She had not so good a night as she had been accustomed to have after taking thirteen grains of pul. ipec. comp. at bed-time. Twelve grains of opium, mixed with three drachms of lard were ordered to be rubbed on the inside of the other thigh at nine o'clock to-night.

" May 23. She was restless at the beginning of the night, but slept comfortably from one o'clock A. M. till ten. Is better to-day than she has been for some time past; has not been troubled with sickness and flatulence, and has had two easy natural stools; her appetite is improved. Pergat.

" May 24. Slept but indifferently the beginning of the last night; but pretty well afterwards; appetite continues better; has had two stools. Fifteen grains of opium mixed with three drachms of lard, were ordered to be rubbed in to-night an hour sooner than usual.

" May 25. She fell asleep soon after the ointment had been applied, and had a good night. The same plan was ordered to be continued.

" May 26. The pains are not so severe, nor do they continue quite so long when they come on; but she seldom sleeps till towards one o'clock. I desired to see the ointment, and found the opium which had been used on the 25th and since that time, was not powdered sufficiently fine.

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"The pained parts were ordered to be rubbed morning and evening, with some of the following liniment, and I desired the friction might be continued fifteen or twenty minutes at a time, that a considerable portion of the liniment might be absorbed, *Rj. Lin. Sapon. Æther. Tinct. Opii aa. unc. i. M. Rj. Infus. Cort. Peruv. Vin. Rub. aa. unc. vi. Tinct. Lavend. Comp. unc. i. M.*—*Cap. cochl. iij. larg. ter die.*

"June 1. She has walked out twice, and is not worse.

"The ointment, each portion containing fifteen grains of opium in fine powder, was ordered to be continued."

From the facts above recited, I think I am warranted in drawing the following inferences: 1st. That opium, when diligently applied externally, so as to be absorbed by the lymphatics, has powerful effects in allaying irritation, removing spasm, and procuring sleep. 2dly. That it is capable of producing these happy effects, where the exhibition of it internally had not the same salutary operation. 3dly. That this mode of introducing it into the system, may be resorted to with advantage, when it cannot be given internally, or when it will not stay on the stomach.

Viewing the subject in this light, a wide field seems to lie open for investigation, which, if cultivated, may possibly lead to important improvements in the practice of medicine.

As opium applied externally, possesses the peculiar advantages above-mentioned; would it not be worth while to try its effects, in this way, in hydrophobia and in tetanus?—Unfortunately the former is justly ranked among mortal diseases, and the latter generally proves fatal. Every other mode of treatment having been unsuccessful, is a sufficient reason for adopting some new plan of treatment, provided it have reason and probability to recommend it; and opium, on account of its soothing antispasmodic properties, seems strongly and peculiarly indicated in these diseases.

But it may probably be urged, that the *modus operandi* must be the same, whether opium be given internally, or applied externally by absorption; and therefore, as it has not been efficacious when taken by the mouth, we cannot expect it to be so when applied externally: but experience, the only true test by which to try every hypothesis, seems at variance with this; at least, the facts contained in the cases above recited, militate as far as their authority extends against the idea of the *modus operandi* being the same, the effects produced being so different.

Another strong argument in favour of the external application of opium in hydrophobia, is, that should it be found to be possessed of properties capable of counteracting the effects of the virus, it will be of peculiar advantage, that we can introduce it into the habit by the same system of vessels which convey the virus into the circulation; and it is worthy of consideration,

tion, that should my hopes and expectations of success be disappointed, it does not seem probable that any mischief can be done by this practice, especially if I am right in supposing the disease to belong to the æthenic class.

Whether opium applied externally, may or may not prove an antidote to the canine virus, it would, I think, be unpardonable to rely exclusively on those plans of treatment, which have been so often tried, and always without success.

Whoever may think proper to make trial of this mode of treatment, should see that the powder, if that be preferred to the tincture\*, is made as fine as possible, and that it is rubbed in, in large quantities†, (the disease being so violent and so rapid in its progress) on the inside of the legs and thighs, and also on the part where the bite was inflicted in hydrophobia, or a wound in tetanus; repeating it at short intervals‡, till it produces some sensible effect on the system in general.

That the other parts of the treatment may coincide, as far as possible, with the soothing plan here proposed, it will be necessary to keep patients, labouring under hydrophobia or tetanus as quiet as possible, and to avoid every thing which can tend to agitate and alarm, excite uneasy sensations, or bring on a return of the spasms. In conformity to this intention, instead of importuning the unfortunate sufferer to swallow medicines, or liquids, of which he has so great a dread, glysters might be given every three or four hours, perhaps with advantage, to support the strength, consisting of good broth, or milk, with thirty or forty drops of laudanum in each. Should the patient ask for food or drink, warm milk, or jelly, or mulled wine, may be given from a tea-pot spout; but on no account ought liquids to be brought into his sight, or to be disturbed or agitated within his hearing. For similar reasons I should think it improper to ask the hydrophobic patient any questions respecting the dog or the bite. He should be carefully guarded against the effects of cold (some patients having expressed almost as great an aversion to a stream of cold air, as to liquids,) by wearing a flannel shirt next to his skin, and by wrapping his legs and feet in warm flannel, or putting him on woollen stockings, and by warming his apartment moderately with a fire or a stove. If it be necessary to remove him to an hospital, or elsewhere,

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\* Would it not be advisable, till we know which of these preparations is absorbed with the greatest facility, to use both, either alternately, or together?

† Not less than a drachm of the powder, or an ounce and a half of the tincture, to an adult subject.

‡ I should imagine an hour would be a sufficient length of time, to allow to intervene between the frictions.



448 *Mr. Brown, on a singular Obstruction in the Ureters.*

elsewhere, after the coming on of the disease, he should be warmly clothed, and removed as easily and carefully as possible.

Should experience shew, that the plan here proposed is capable of curing, or even of mitigating the sufferings of this unfortunate class of patients, a most valuable accession to medical knowledge will be gained; but we ought not to be satisfied with a few trials of this practice, I think, should the result be unfavourable.

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*A singular Case of an Obstruction in the Ureters.*

[Communicated by Mr. CHARLES BROWN, Surgeon.]

JOHN WILSON, Esq. a gentleman in the law, had laboured many years under severe fits of the stone, which at intervals were so violent, as to render him insensible. He had frequently passed several small stones, with great pain. Last Monday evening, soon after I had visited him, he was seized with cold shivering fits, a shooting pain in the bladder, extending up the rectum, attended with nausea. Nothing was evacuated from the bladder, except now and then a spoonful of clear limpid liquor, which had neither the smell or taste of urine. He was bled on the morning—took aperient and anodyne medicines during the day—and at night was put into the warm bath. The obstruction continued till Tuesday, about four o'clock P. M. when he became comatus, and died. Having obtained leave, I opened the body, when the following morbid appearances presented to view, viz. the left kidney was considerably less than natural, and was become a thin sac; the ureter belonging to it was very small, and felt hard—when cut open, it was found filled with gravel of a dirty colour, squeezed so close together, that no liquor had probably passed that way for a considerable time. The right kidney was distended with urine to a monstrous size, and the ureter was so large, that it had all the appearance of a portion of intestine. Upon opening it down to the bladder, I found a small stone fixed so firmly between the coats of the bladder, that I had some difficulty to bring it out—it was not above a fourth of an inch from the orifice of the ureter into the bladder. The prostrate gland was diminished in size, and ulcerated; calculous concretions were formed in the urethra; these concretions were submitted by myself to the following experiments:—

*Analysis of the Concretions.*

A small fragment being put into a drop of marine acid, on a piece of glass, over a candle, was soon dissolved; and upon evaporation of the acid, crystallized in needles, making angles of about 60° and 120° with each other.

Water dropped on the crystals would dissolve no part of them; but in marine acid they would re-dissolve, and might be crystallized.

Vitriolic

*Dr. Vaughan, on the Danger of introducing unknown Poisons: 449*

Vitriolic acid formed selenite with the calcareous earth.

By acid of nitrated quicksilver, phosphoric acid was readily obtained.

When heated, these concretions decrepitate strongly; they next emit the usual smell of burnt animal substances, and were charred, but would not become white, though partially fused.

HATTON GARDEN, May 19th, 1799.

CHARLES BROWN.

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*To the Editors of the Medical and Physical Journal.*

HAVING perused, with great satisfaction, the three first numbers of your Journal, my inclination leads me to send you a case which fell under my observation, in April last: this case, as demonstrative perhaps of the danger of introducing unknown poisons into the human system, may not be unacceptable to some of your readers.

ROCHESTER, May 21, 1799.

WALTER VAUGHAN.

Mr. CHARLES GREEN, sadler, at Northfleet, a man about thirty-five years old, athletic, and convivial, being desirous of losing some blood, consulted his surgeon, and was assured by him it was improper,—if for no other reason,—because unnecessary. This honest assurance he unluckily did not duly regard: for he applied on the ensuing Sunday to a barber, who, as requested to do, opened a vein (*Vena Mediana*.) The wound of the vein was very large; and the discharge of blood from it was profuse, quick, and difficult to be stopped: when stopped, however, the arm was kept quiet, and no pain was felt in it all the next day; nor, indeed, till Tuesday evening. At this time, a pain was felt at the wound particularly, but extending from it as high as the middle of the arm. The pain encreasing, Mr. Green soon began to experience some pain of the head, and some confusion of thought, which, together with extreme anxiety, restlessness, shortness of breath, and frequent rigors, made him declare to his wife, his apprehension that his having been bled would presently cost him his life.

His surgeon was sent for, the first time, on Wednesday morning, to whom the sides of the vein did not appear to be united; indeed, they appeared as if they had inflamed and suppurated; and about the middle of the arm, there was a tumour almost as large as a hen's egg, and very tender to the touch. Mr. Green's pulse was found small, quick, and irregular; his skin was very hot; and there was a slight delirium, with slight *subfultus tendinum*. The tongue was dry, and a little discoloured. A cataplasm of bread and milk was accordingly applied to the wound, and to the tumour; a blister was fixed between the shoulders, and a gentle purgative medicine was administered; also *mistura camphorata*, with *æther vitriolicus*, was given occasionally. But,

450 *Dr. Vaughan, on the Danger of introducing unknown Poisons.*

notwithstanding the blister excited a very considerable discharge, the bowels were soluble, and the perspiration free and general; the symptoms (delirium, and subsultus tendinum especially,) became worse every hour.

I was therefore requested, on Thursday morning, to consult with his surgeon, and to determine whether any thing further could be done. I then gave it as my opinion, that Mr. Green's symptoms proceeded from some morbid poison, I knew not what, unfortunately introduced by the barber's lancet; but of this no direct evidence could be obtained:—the barber, doubtless, supposed his lancet to be clean; and he might, perhaps, have forgotten the immediately preceding time and occasion of using it.

In the first place, the barber might have used the lancet some days, or some weeks before, and in a case where no morbid action was going on; for it is a fact incontrovertible, that the healthy secretions of one man may, under certain circumstances, become poisonous to another; and it is almost unnecessary to add, that a very small quantity of most morbid poisons, although ever so much diluted by the fluids of the human body, or by simple water, is as capable of exciting a disease, as the matter containing the poison is, in its purest and most concentrated state.

In the second place, an absorption had, I thought, taken place, from the inflammation of the absorbents being entirely above the puncture of the vein; the inflamed absorbents were easily discovered between the puncture and the tumour, and even for some way higher than the tumour. Why the poison caused a tumour, before it arrived at the axilla, I know not; there are, however, poisons so acrid as to inflame vessels, while passing through them, and this was, perhaps, one of them; and may not some casual, but unobserved pressure, have stopped its progress to the axilla; as pressure is known to stop the progress of inflammation along the veins?

In the third place, I thought it clear, that some matter had been absorbed, from the general history of the disease, compared with that of the small-pox, and of every disease produced by the introduction of a morbid poison through a wound; the wound of the vein underwent inflammation and supuration, and then the disease appeared. Its appearance so soon after the application of the poison, was probably owing to Mr. Green being naturally a healthy man, and to his labouring under no other disease at the same time. How far the weakness, induced by the great loss of blood, may have contributed to the quick appearance of the disease, I leave for others to determine; but that the weakness (the diminution of power,) bore no proportion to the increased action, was evinced by the pulse, the respiration, the sweat, and every symptom. Mr. Jones, with his usual sagacity, saw this at his first visit, on Wednesday morning; and his remedies were, in my humble opinion, judiciously chosen; but he entertained, I believe, no hope of Mr. Green's recovery, from the moment he first saw him.

The

The result of our conference was, that we should diminish the action, or increase the power of the system. We agreed to repeat the cataplasm, but with the addition of some unguentum hydrargyri fortius; we agreed also to give freely cinchona, opium, and occasionally wine; another blister was laid upon the breast. This was, as already said, Thursday; and on Friday by twelve o'clock at noon, when I saw Mr. Green again, the tumour of his arm had totally subsided; and there were evident marks of inflammation from the bend of the arm to the axilla. But, alas! though Mr. Jones had, in my absence, applied sinapisms to the feet, with a view to relieve the head, yet the disease, which had undoubtedly a regular time of appearing and of ending, went on with such celerity and increase, that Mr. Green died this very day, Friday, in less than three hours after we had left him.

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*To the Editors of the Medical and Physical Journal.*

THE case of monstrosity given by Mr. PULLER, in your third Number, is extremely curious; and excites our admiration, that a child so formed, could "live about thirty hours," and was capable of taking a "little nourishment more than once." This surprising *lusus naturæ* is, however, as to its formation, by no means a singular one. I remember seeing one very similar about twelve years ago. I think the subject was a boy; it moved its limbs when first born a few moments, but never breathed. The parietal bones stood up on each side, and being somewhat crooked, had the appearance of small horns. There was no brain, but a small excrescence, which seemed to form the beginning of the medulla oblongata, and entirely destitute of the occipital bone. I made a preparation of this subject, which remained with the gentleman with whom I then lived. Sometime in March last, I was called to the wife of a carpet-weaver, in this town, who was in labour. Upon touching, to ascertain the presentation, I had no doubt, from the soft sensation the part gave to my finger, that it was a breech case; and I fully expected a tedious labour; but, to my surprise, the very next pain protruded the head, and the whole body immediately followed. I now discovered the soft part I had touched, was a little *nub* just above the occiput, which supplied the place of a proper brain.—There were no parietal bones, and so small a part of the frontal, that the eyes seemed to stand on the top of the forehead. The face was regularly formed, but the back part of the head was quite flat, in a line obliquely backward from the frontal sinuses to the first vertebræ of the neck. This monster was a girl, and quite motionless when born. I much wished to preserve it, but could not overcome the prejudices of the poor woman. Though I am quite sceptical as to the old doctrine, of external objects producing these monsters, yet I enquired of the mother, whe-

ther any thing had occurred during her pregnancy, to which she attributed the defect in the child's head. But she knew of nothing, excepting a fall, about a fortnight before she was delivered, and even this was not much noticed at the time. All speculation about the *cause* of these *unnatural* appearances, seems premature, till "we know how the bones do grow in the womb of her that is with child," but we only know, that it is the work of God, who maketh all."—If the above should be thought worthy a place in your very useful publication, I think the insertion of the following case, at the same time, may be of public utility, as it shews the extreme danger those unfortunate persons are always in, who labour under any species of hernia. On the 17th of this month, I was called to the wife of an alehouse-keeper in this town, and found her in *articulo mortis*, as she expired in about half an hour after I saw her. Upon enquiring into the preceding circumstances, I learnt, that three days before, some persons had quarrelled in the house, and at last got to blows. The deceased had exerted herself in parting them, but in vain. From her fright, (as was supposed) she fainted, and had continued, at intervals, to do so till her death. Frequent vomitings came on, and she had no stool from the first attack. It may appear extraordinary, under these circumstances, that she should not apply for medical assistance sooner; but all her symptoms being attributed to a fright, created little alarm either in her or her friends. This account did not satisfy me as to the cause of her death, and I suspected some blow had been given her in the quarrel. As her body appeared swelled, I gently pressed it with my hand, and in doing so, I felt through her cloaths a large substance, and, questioning her husband upon it, was informed she had an umbilical rupture all her life-time, but had never found any inconvenience from it. I had now no doubt but this had done the mischief. A rumour was soon spread, that the poor woman lost her life from some person doing her violence in the scuffle; which, coming to the coroner's ear, he sent a message to Mr. CRANE, (surgeon, of this town,) and me, desiring us to examine the body, and report our opinions to him, as to the cause of her death. We accordingly opened the umbilical tumour, containing some omentum, which was neither inflamed nor discoloured; but after carefully removing this, we found a small portion of intestine, not larger than a small walnut, completely strangulated, of a very dark brown colour. As no other marks of violence appeared about her, there could be no doubt as to the cause of her death. Her own exertion in the quarrel, probably protruded the gut, and inflammation and mortification ensuing, a very worthy woman was cut off from her husband and eight small children.

KIDDERMINSTER, May 24, 1799.

GEORGE CUSANCE.

*An*

*An Inquiry into the Causes which produce Disease among the Troops at the Cape of Good Hope, with a View to discover the most effectual Means of Prevention:—To which is added, the Outline of a Plan of Military Hospitals, on a Principle and Construction tending to introduce a more successful Treatment of the Sick.*

[By STEWART HENDERSON, late Apothecary to his Majesty's Forces at the Cape.]

THE following investigation was suggested in consequence of his Majesty's troops being for some time very sickly in this quarter, and erroneous opinions having gone abroad, respecting the cause of the sickness and mortality which ensued.

The plan of military hospitals, of which I here give the outline, is on a principle and construction different, I believe, from any yet established in Europe.

The want of proper military hospitals has been severely felt, I may say, both at home and abroad; but since his Royal Highness the Duke of York filled the important station of Commander in Chief, those useful national institutions which reflect so much honour on a country, are erecting, I understand, in different parts of the kingdom.

In the latter end of 1793, a regiment arrived at Plymouth, from Cork, in a very sickly state, having upwards of three hundred men ill of a malignant jail-fever. The best and only accommodation that could be had, was a large stable, ill-calculated to contain such a number of men, labouring under infectious disease, and in a crowded situation. If proper ventilation, and hospital-necessaries cannot be procured, medical efforts avail but little. As might be expected, every symptom was aggravated, and the effect of medicine counteracted. From what I have observed in the four quarters of the world, where I have been employed on actual service, in time of war, the places allotted for, and named hospitals, appeared to me only adapted for men to die in, not to recover from disease; nor do I think that the great sickness and mortality which have happened to the British troops in different parts, particularly in the West Indies, and on the Continent, have actually arisen from the irremediable effect of climate, or unavoidable hardships of service, but from causes which I think might have been greatly obviated, if not entirely prevented: it is therefore to be hoped, that we shall profit from experience and past misfortunes, by adopting those means of prevention, which I am well convinced are within our power, requiring only the aid and energy of the legislature, to appoint proper officers of health, establish lazarettos, with the observance of quarantine, which are found so necessary in other countries for preventing the introduction of infectious disease, as well as having hospitals constructed on a proper principle; and that the medical department in these countries be filled by men of observation and experience.

Had

454 *Mr. Henderson, on the Diseases at the Cape of Good Hope.*

Had these precautions been adopted, and attended to in the West Indies, in my opinion, the saving to the nation, in men and money, would have been immense. We can only lament, that they were not put in practice; as they would, in all probability, have effectually destroyed the contagion at Grenada, and prevented the importation of that pestilence into the other islands, in the manner related by Dr. CHISHOLM, in his book on the Yellow Fever.

I submitted a plan to Government in 1791 (which I shall insert at the end of the following pages,) for preventing the introduction of infectious disease into the garrison at Chatham, which was approved of by the Surgeon General, Mr. JOHN HUNTER, who strongly recommended the adoption of it. I was afterwards informed, that it had been adopted by the Secretary at War, and found not to answer. To be satisfied on this point, I went to Chatham, and found that a ship indeed had been taken up, but not appropriated for the purpose of prevention (the important object I had in view,) but for the reception of sick, of different complaints, as well as prisoners. General Fox, the commanding officer of the garrison, at the same time informed me in writing, that he would never be induced to recommend soldiers of any description to be put on board ship, except such as were prisoners, merely for the sake of security, when there were not sufficient prisons on shore.

As there is no building unconnected with the garrison, for the purpose of prevention, and the hospital being a part of the barracks, it is evident, from the description of men brought in, that infection must be, I may say, daily introduced; and, I much fear, a portion of it exported to different parts of the world, by every detachment sent from thence, notwithstanding the prudent and judicious measures ordered to be pursued by the commanding officer, as well as the attention paid by the gentleman who superintends the medical department—but medical men can do no more than recommend. However, since the publication of my printed letter, in January 1795 (addressed to the officers of the army under orders for the West Indies,) on the means of preserving health, I find that certain articles of diet and necessaries for the sick, which I particularly recommended in that letter, are now supplied at the expence of government, for the use of the troops on board; and I can affirm, that the most beneficial and salutary effects have since been experienced, by the arrival of some regiments at the Cape from England, without having any sick; the consequence, no doubt, of prevention being better understood and attended to.

Travellers who have visited this part of Africa, for the purpose of investigating the Natural History of the country, speak with rapture of the salubrity of its air and natural productions. I think it will be found, upon inquiry, to merit the most favourable opinion. The face of the country, for a considerable

derable distance (except the land which forms the Cape,) is rather low; but open, and well cultivated, of a sandy and marly soil, which soon absorbs the rain, thereby preventing the noxious exhalations, so productive of sickness in hot climates. The air, except a few months, may be called temperate; the atmosphere is seldom loaded with moisture, but possesses a degree of elasticity not often felt in any other country; and although Fahrenheit's thermometer, during the summer months\*, ranges from 80 to 90, and frequently a considerable variation is suddenly experienced; yet from the dryness of the atmospheric air, and a brisk circulation of it being kept up by the prevailing south-east winds, the constitution suffers little from relaxation. Invalids from India, labouring under complaints of debility, the effect of great heat, soon recover their strength here, by the temperate and bracing air of the winter months; and a further proof of its salubrity are the florid and healthy looks we perceive in the Dutch inhabitants, especially those who live in the country, and are not enervated by luxury and indolence; though it is remarked that there are not many instances of longevity among them, owing in a great measure to their habits and manner of life, yet they are happily exempt from many of those endemic and epidemic diseases which rage in other parts of the world, and annually carry off great numbers. The small-pox, measles, remittent and intermittent fever, and that most fatal of all diseases, the jail, hospital, or ship fever, which destroys so many of the human species in every part of Europe, are never generated here, and are unknown, but when introduced; which, unfortunately for the natives, has sometimes happened. We likewise find, that neither the inhabitants or officers are attacked with the diseases which prevail among the soldiers; and it is a singular circumstance, that not an officer of the army or navy has died of disease contracted here, since the British forces arrived at the Cape (during a period of three years;) which I think clearly proves that no noxious quality exists in the air of this country, which has been by some imagined, and erroneously blamed, as the cause of the malignity of the disorders, and the many deaths that have occurred in the General Hospital. We must therefore look for other causes than those assigned.

The natural productions for the use of man perhaps exceed in variety most parts of the world. At that season of the year when great heat prevails, nature has made ample provision to lessen its influence on the human body, by the abundance of sweet acid fruits (European and Tropical,) of which instinct and our reason dictate the use.

Upon the whole, considering its situation, climate, and natural productions, so far from being deemed unhealthy, it may more properly, in my opinion, be styled the Montpellier of the Southern hemisphere.

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\* November, December, January, and February,



The diseases which prevail among the soldiers are: fever, dysentery and ulcers.—The principal causes seem to be the unlimited and immoderate use of ardent spirits, want of proper diet, cloathing, and bedding.

There is, no doubt, in the human body, a constant tendency to putrescency; more especially in a hot climate, producing various morbid appearances; and this tendency will be increased in proportion to the nature and quality of our food. Men using much animal food, without a due proportion of vegetables, soon contract diseases of a putrid nature; and when assisted by that powerful agent, and destructive poison, new brandy, which the soldiers have so much access to, cannot fail to produce such changes, both in the solids and fluids, as to aggravate those diseases which, from other causes have incidentally come on.

In a constitution thus previously prepared, it is easy to conceive, that the smallest scratch or wound will degenerate into an ulcer; and if seized with fever or dysentery, the worst termination may be expected.

I therefore consider the immoderate use of ardent spirits to be the great leading cause not only of disease, but those frequent punishments which have proved fatal to many of the soldiers, from the bad state of their constitutions, and foul air of the hospitals. In my printed letter already mentioned, I gave an instance of what happened in the southern province of India, when there was no attack for the troops in camp. The sick considerably decreased, although the fatigue of duty was great, and the season unfavourable; but a few days after, receiving a supply of that liquor from Calicut, the sick-list again returned to its usual standard.

The want of flannel waistcoats and bedding in barracks has assisted in producing disease, particularly the dysentery. The fever is supposed to have been introduced from the ships, but may likewise be generated in the barracks, unless the greatest care is taken to preserve cleanliness and ventilation.

Having endeavoured to show, what are the causes of disease among the troops, it is next to be considered in what manner those evils may be obviated.

Many difficulties arise on this head, which, perhaps, can only be removed by the strenuous support and exertions of commanding officers. The thoughtless set of men which the generality of soldiers are found to be, with respect to what concerns their health, should make them be considered and treated as children; obliging them to conform to those regulations, which have been found to be most salutary, and preclude them as much as possible from obtaining what is pernicious.

Cleanliness, not only their persons, but in and about the barracks, ought to be the first consideration: all filth, dirt, and offal of animals (of which the Cape so much abounds), should not be permitted to be left on the ground, but thrown into a pit, and covered with earth.

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The barrack-rooms should be frequently white-washed, and no obstructions remain to prevent the free circulation of air.

To guard against the variation of the temperature of the atmosphere, and chill of the night, the men should be obliged to wear a flannel waistcoat next their skin, which ought to be frequently changed.

They should have bedding, and sleep in hammocks, or on cot-frames, at least two feet above the surface of the floor.

They should have two regular meals a day.—For breakfast, tea, coffee, or rice-gruel, which ever can be had at the least expence; and as they have no beer, as in barracks in England, this might be granted in lieu thereof. In the West Indies, and other climates, a hot breakfast has been found most conducive to health. For dinner, beef, or mutton, made into soup, with a proportion of vegetables, and seasoned with capsicum, the pepper of the country: a cabbage would also be daily necessary for every six men: but as soldier's pay may not be adequate to purchase a sufficiency, might not the public grounds, or waste land, be cultivated, for the raising of vegetables for the use of the soldiers?—or it might become an object of government to make some allowance for that salutary purpose; which trifling expence, I am convinced, would in the end be greatly over-balanced, by a considerable reduction of hospital-expences, and the preservation of many lives\*.

By attention to a proper diet, their constitutions would be more able to resist the baneful effects of that destructive poison before alluded to (new brandy,) the use of which it is found so difficult to prevent, while at the same time their diseases would be of a less malignant nature.

To prevent as much as possible the use of that pernicious spirit, so destructive to the health and morals of the men, let there be no house in the town licensed to sell wine or brandy to the soldiers; and that a tax be laid on the retailer of the latter article, so as to prevent the soldier from being able to purchase it. Every regiment should have a canteen near the barracks, to sell nothing but wine, subject to the inspection of an officer, to see that it was of a good quality, and every precaution taken to prevent abuses.

When a fever of an infectious nature has been introduced from ships, or generated in the barracks or hospitals (which frequently happens, when they are not sufficiently ventilated, and too much crowded,) the most effectual

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\* Since this inquiry was drawn up, the soldiers have had their pay increased, by the recommendation of his Royal Highness the Commander in Chief, in consequence of which, they are abundantly supplied with vegetables, and every necessary for preserving their health.—This salutary measure, joined to the judicious regulations ordered to be pursued by Major-General DUNDAS, the Commander in Chief at the Cape, had a wonderful effect on the health of the army; for many months there was not one medical patient in the General Hospital, for every physician there on the staff.

458 *Mr. Henderson, on the Diseases at the Cape of Good Hope.*

means should be employed to eradicate it, and prevent the infection spreading. A ward should be particularly appropriated for the reception of those cases: all their cloaths, bedding, &c. should be completely fumigated, as well as their bodies, by a mode lately recommended by a very ingenious and eminent physician, Dr. CARMICHAEL SMITH, which is said to have answered most effectually in a highly infectious fever, which prevailed in some prisons and ships in England.

By attention to ventilation, cleanliness, proper diet, cloathing, bedding, and preventing the use of ardent spirits, the most beneficial and salutary effects would no doubt be produced, in a country where the climate is so favourable to health, and I think is proved to have little or no share in occasioning the diseases which are so destructive to the troops.

It has been often remarked, that among the numerous calamities attendant on warfare, infectious disease has ever been considered the most fatal foe: those who fall by the destructive implements of war are few indeed, compared to the great number who perish in our armies and fleets, by the secret malignancy of this disease, as we find that no region of the globe is exempt from its baneful influence, where military operations are carried on. Every precaution we are acquainted with should be put in force to prevent the introduction of an enemy so destructive to the human race.

The bad construction of the hospitals, and want of proper arrangement in them, I consider a principal cause of the ill success which attends the military practice of physic; and to have greatly contributed to generate, and, I may say, nurse infections to that degree of virulence which has been fatally experienced in this and every other quarter, particularly in the West Indies, and on the Continent; for a crowded hospital, badly situated, want of cleanliness, ventilation, and good nursing, will certainly counteract the best effect of medicine: this appears, by Dr. M'LEAN, to have been severely felt, and fatally experienced, at St. Domingo.

With deference, I offer a sketch of two hospitals calculated for an army of six or seven thousand men, in this or any other healthy country; which I think, when assisted by great medical skill, would prove a formidable enemy to combat and destroy disease; and from particular enquiry, I can say, the expence of building them would be trifling considering their utility. Every choice of situation is to be had here (Cape of Good Hope,) which is of the utmost importance in fixing an hospital.

We find the diseases which attend military service in every part of the world, are: fever, dysentery, and ulcers; the latter, though not produced by contagion, yet from the fœtor, and putrid state of the sore, pollute the air, and render it in a great degree noxious to animal life. In the best ventilated hospital, where a number of morbid bodies are placed in one ward, foul air  
will

will be generated; this, joined to the distress both of body and mind, which each patient suffers from another, must aggravate every symptom of disease, and greatly retard the cure.

By each patient being placed in a separate apartment, many advantages would arise, tending to promote their recovery; infection would be destroyed, and entirely prevented; and the cure accelerated by rest and quietness.

The want of regular and orderly attendants on the sick, by employing men from the different regiments, besides weakening the military force, is found to be attended with other bad consequences to the service. I would therefore propose, that a corps be regularly appointed to the hospitals, under the name of hospital attendants; to be composed of sober and humane characters. The men to wear a uniform to distinguish them from the patients, and might consist of the following:

*To the first Hospital, of 120 Patients.*

1 Ward-sergeant  
1 Matron  
1 Surgery-man  
1 Barber  
1 Cook  
6 Washerwomen  
20 Orderly-men  
10 Nurses  
4 Blacks to keep the rooms  
— and privies clean.  
45 Total.

*To the Convalescent Hospital, of  
160 Patients.*

1 Ward-sergeant  
1 Matron  
1 Cook  
1 Surgery-man  
1 Barber  
6 Washerwomen  
4 Orderly-men  
4 Nurses  
2 Blacks, to keep the rooms  
— clean  
21 Total.

STEWART HENDERSON.

*The following Outline of a Plan for preventing the Introduction of Infectious Disease into the Garrison at Chatham, was forwarded to the War-Office by Mr. WOOD, Surgeon to the Garrison.*

SIR,                      *Upper Barracks, Chatham, May 1st, 1791.*

I beg leave to propose a plan which, I think, if adopted, would be the means of putting a stop to the introduction of the jail-fever into the garrison, and prevent the further progress of that malignant disease. It has one thing to recommend it, which perhaps may be deemed a consideration, viz. that it will put government to little expence, as well as prevent many desertions, and some diseases, the consequence of irregularities.

We know the causes of this disease to be foul air, and want of cleanliness; of course, the men most liable to it, are those confined in prisons, and other unventilated places, where cleanliness to their persons is not attended to: and what renders the introduction of this fatal disease the more to be dreaded is, that men of this description often retain the infection, and have the power of communicating it to others, though at the time, they have no

symptoms of the disease ; for it is known to lay dormant a considerable time, until brought into action by some exciting cause.

The garrison at Chatham being the general receptacle for recruits, many of them brought from the Savoy, and other prisons in England, it is evident what a source of infection must be introduced and propagated through the barracks by their mixing promiscuously ; nor is it possible to eradicate it while the fresh seeds of infection are daily from all quarters brought in.

To obviate those evils, I would propose that a ship of the line (one of the old hulks) be employed as a lazaretto, or receiving ship, and stationed, for conveniency, opposite the garrison.

The recruits, instead of being brought into the barracks, to be sent immediately on their arrival, on board this ship (particularly those who have been lately in prison), to be stripped of their filthy clothes, which should be burnt, as well as every thing about them that appears to retain infection.

Their bodies to be well washed with warm water and vinegar, and the utmost cleanliness attended to while they remain on board.

That a superintending officer, with a surgeon, be appointed to give directions respecting the salutary regulations, and medical assistance in such cases as may occur.

Proper non-commissioned officers to be on board, for putting the regulations strictly in force, and preserving order and regularity.

The recruits to remain on board at least a fortnight ; but if any appear suspicious, which may be judged from their unsalutary appearance, visible to every medical observer, let those remain a week longer. The itch, and other slight contagious diseases, may be cured before they are sent on shore.

That a ship of a smaller size be employed as an hospital, for the purpose of receiving such men as may be attacked with the malignant fever ; who should be removed from the receiving ship on the first appearance of the disease ; and, as the men can be mustered daily by an officer and surgeon present, the earliest attack may be discovered, which is of the utmost importance towards the cure of the disease.

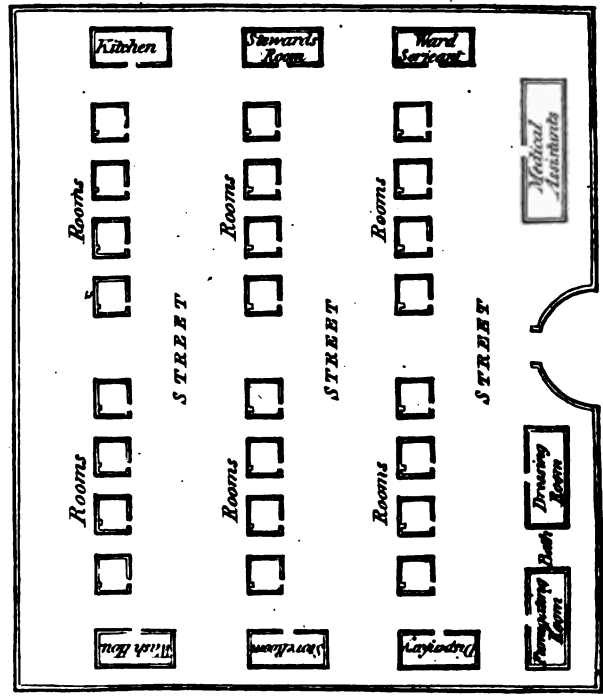
Such is the outline of a plan which, I think, with some improvements, that you and others, more conversant in the service, are capable of making, would tend most effectually, not only to put a stop to the introduction, but check the progress of a disease, which proves so destructive to the troops.

STEWART HENDERSON.

TO VINCENT WOOD, Esq.  
*Surgeon to the Forces, at Chatham.*

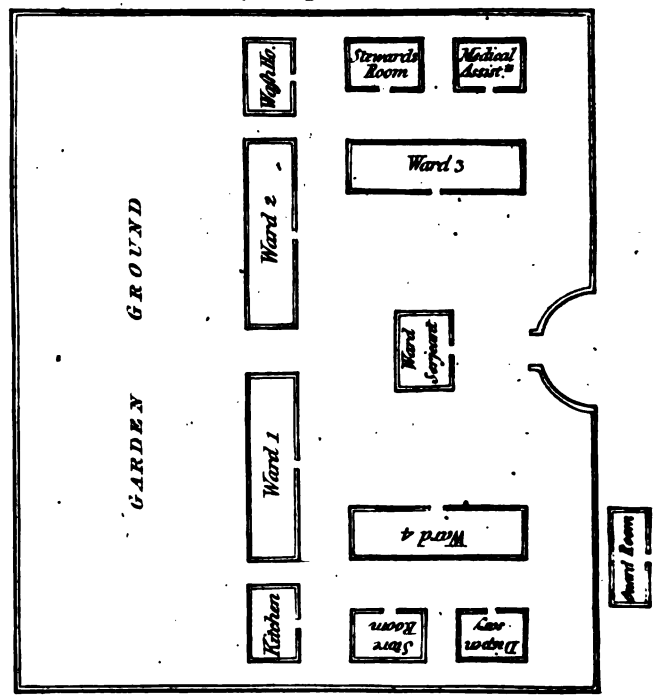


*Outline of a Plan for a Military Hospital to contain 120 Patients in Acute and infectious disease. Each patient to have a separate apartment 7 feet by 8, height 10 feet, the floor brick or stone, & frame of the bedstead iron. Four feet distance between the rooms and the streets twenty feet wide. The patients to wear the hospital dress until their situation renders it proper for them to be removed to the Convalescent Hospital, adjoining. Nothing to be in the rooms that can retain filth, vermin or infection. — A small ventilator in each apartment and a window over the door opposite to another.*



Military Hospitals.

*Outline of a Plan for a Military Convalescent Hospital, to contain 160 patients, divided into 4 wards, each 120 feet in length, 18 in breadth, and 14 high; the floor brick or stone; & frames of the bedsteads iron. Ventilators in each ward.*



*On the Nature and Causes of Dysentery. By Mr. J. CHRISTIE,  
(27th Foot.)*

[Concluded from our last Number, p. 347—356.]

WITH respect to those contagions producing fever, the plague, dysentery, &c. I question whether they be specifically distinct, or whether, from a higher degree of virulence of the same poison, different forms of disease appear.—Thus I have frequently observed, particularly in India, those soldiers who were much addicted to drinking toddy, and other liquors that affect especially the alimentary canal, subject to fluxes; and other soldiers more temperate, but in other respects exposed to the same exciting causes, attacked with fever, &c. The heat of the atmosphere, when carried to a certain length, certainly has the power of modifying or rendering altogether inert the action of contagious effluvia; hence within the Tropics, the plague and jail-fever are either unknown, or rendered much less formidable than they would have been in more temperate climates. As I before mentioned, I could never observe the dysenteries in India communicated from one person to another.

As the syphilitic poison is a native of a warm climate, where the passions are readily excited, and generally keen, may it not be probable, that this disease was first produced by excessive and licentious sexual intercourse; by this intercourse being indulged when the habitual changes of the female, and the more acrid secretions of the warm climate, and want of cleanliness, would render the formation of a new poison more likely to happen? This will be corroborated, by observing how other morbid poisons have been generated by the bodies of men placed under certain circumstances; and this leads me to conjecture that the syphilitic, like other morbid poisons, may also exist only in a gaseous or invisible form; that its activity is only preserved when diffused in a proper vehicle, as for instance, the serum of our blood; that this poison is either of so tenacious and sluggish a nature, that the atmosphere has not the power of suspending it in an active state, or what would appear still more probable, there may be a neutralizing quality in the air which has the power of rendering the syphilitic poison inert, the moment it begins to evaporate. The atmosphere possesses, perhaps, many such benign powers, with which we may never become acquainted, and here it would appear at least consonant to the benevolence and wisdom of the Creator of the Universe, to suppose there may be a quality in the air to prevent the ravages of a poison, which, were it allowed to float about actively, would render the pure and virtuous its victim, as well as the reveling debauchee.—While we thus suppose that some of the fluids of our bodies are the only proper vehicle in which certain poisons can exist, we  
may



may also be allowed to conjecture, that the air is the only fluid in which others can preserve their peculiar properties; and that, when they come in contact with the fluids of our body, *they* have the power of rendering such poisons inert; and this act of the constitution may produce various kinds of fever, among which we would class intermittants, scarlet fever, hoöping-cough, and probably also measles.

Having thus mentioned so fully the appearances of dysentery, and offered those conjectures with regard to its nature and origin, and contagion in general, we now proceed to mention the method of cure that was employed principally at Bombay.

When along with other symptoms of the disease, there was a foul tongue, nausea or vomiting, we generally began by giving an antimonial emetic, as a solution of four or five grains of the antimonium tartarificatum, dissolved in four ounces of water; and the patient directed to take an ounce of this every fifteen minutes till he vomited; and if, (as generally happened) it also operated by stool, so much the better.

Commonly however, on the first appearance of the disease, we began by giving an ounce or an ounce and a half of Glauber's salts (natron vitriolatum ph. Lond.) with or without a little manna; and, if the griping continued, six drachmas or an ounce more of the same salts was given, to carry off the complaint entirely; although, at the first attack, there was every appearance of a violent disease. In all the milder cases these salts rarely failed in removing the symptoms, and I have long thought the neutral salts are peculiarly well adapted for the cure of this disease. I have therefore been generally in the habit of giving either the Glauber's salt or sal catharticus amarus, (magnesia vitriolata) in the beginning of dysenteric affections, and have constantly found them preferable to any other purge whatever.

In the dysenteries I have had occasion to see, in camps in England and on the Continent of Europe, I found that after a purge or two of the neutral salts, the giving a weak solution of the tartarised antimony, (as one grain in two ounces of water) in the quantity of an ounce three or four times a day, so as to operate chiefly on the bowels, appeared to be well adapted for the cure of dysentery—seldom was any thing else necessary—it rarely, in such doses, produced nausea—it kept the bowels pretty easy, and generally occasioned a salutary moisture on the skin, which always mitigates the violence of the dysenteric symptoms.

In those cases at Bombay, however, when the symptoms continued unabated after the purges, we began immediately the use of the mercury internally, as well as externally applied. The freedom with which practitioners use mercury, in this and other endemics of India, is well known; the generality of its application, and the character it has long held among, perhaps, some  
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of the most eminent practitioners of the British empire, seem to render it altogether unnecessary for me to expatiate on the utility of this medicine in dysentery. On my arrival at Bombay, I was not indeed acquainted with the general use of mercury, in the cure of this complaint; and I was therefore employed at first in administering the usual remedies only, until Doctor KERR, of H. M. 75th Regiment, a gentleman of great discernment and much experience in tropical diseases, cleared up my mind respecting its use—his directions were regularly followed, and I must confess with considerable heart-felt satisfaction to myself.

In some, where there was more than usual vascular excitement, and where the habit was full and plethoric, we sometimes took away a few ounces of blood from the arm, and seemingly with benefit. In no complaints, however, should the lancet be used with greater caution perhaps than in this disease, for it is apt to be followed by great debility, and inflammatory symptoms seldom run so high as to urge its use.

Immediately than after purge of the salts, (to which was occasionally added, with advantage, half of a grain or so of the tartarized antimony) a drachm and a half of the common mercurial ointment was rubbed in morning and evening, at the same time giving a pill, consisting of two or three grains of calomel, every night at bed time, till the mouth became affected; and in a very few instances indeed without an immediate relief from all the symptoms of the flux.

When however the griping and tenesmus continued violent after the mouth became affected, the mercurial frictions were increased and continued till a copious salivation was brought on, and always with manifest advantage.

When the skin felt very hot and parched, together with the calomel pill was added about the third of a grain of the tartar emetic, or what seemed to answer still better, six or eight grains of James's powder. These generally by introducing an agreeable diaphoresis, afforded considerable relief; besides, antimonial medicines seemed to hasten the action of the mercury, an event always to be wished and looked for, and which, as before mentioned, seldom failed in procuring a remission of the dysenteric symptoms;—when these however were unusually violent, and the mercury long and tardy in operating, the calomel pill was given morning and evening, and the mercurial frictions were increased to two, or even three drachms of the strong ointment two or three times a day; and, though this was certainly a great quantity of a very powerful remedy, in a very weakening disease, I never had any cause to regret such exhibition, for it frequently seemed to act like a charm; and even where there is more than usual vascular excitement, the mercury should never be long withheld or scantily exhibited.

When a sufficient quantity of the mercury could not be rubbed into the  
legs

legs and thighs, the friction were then directed to be made on the sides, and abdomen also, thus covering, as it were, the whole body with mercurial ointment.—In this way two or three ounces of the strong ointment would be used in the course of a few days, at the same time the calomel pill morning and evening; and, although the effects produced by the medicine, as profuse salivation, hemorrhagy from mouth and throat, and a total incapability of swallowing hard solids, these were matters of secondary consideration when compared to the relief obtained from the distressing griping and tenesmus.

In some obstinate cases, especially those of long standing, or which had undergone relapses, the mercury could never be made to effect the mouth sufficiently—it merely produced a brassy kind of taste, without an increased discharge of saliva, or moisture on the skin. In some such cases, small doses of James's powder, or the warm bath continued for a sufficient length of time, appeared to promote the action of the mercury, and to relieve the complaint.—Along with the free use of the mercury, we did not fail at the same time to employ other remedies in use in this complaint.—The patients drank largely of bland mucilaginous drinks, as barley or rice water, linseed tea, solution of gum arabic in toast and water, &c.—These, and particularly the oily demulcents, as they have been called, are particularly useful in sheathing the intestines from the acrimony of the matter.—It is seldom, however, that the stomach can bear the oily medicines in such quantity as to be of any great service—and the acidulated drinks, as decoction of prunes or tamarinds, so frequently, and, from the general putrid tendency of the disease, so rationally recommended, will seldom be found at all admissible: though at first eagerly desired by the patient, he soon finds such drinks increase the griping intolerably, and he prefers the plainest, which in most cases are the best.

The patient's diet consisted of vegetable food and soups only, as barley or chicken broth, wheat, or rice pudding, sago, and during the violence of the disease, a total abstinence from animal food.

A large emollient glyster, made of warm water and oil, or a starch glyster, or one made of decoction of linseed with oil, was thrown up the rectum at bed-time. When the griping stranguary, or tenesmus was very severe, these were repeated two or three times in the course of the day; and, by adding a couple of grains of opium, or about sixty drops of the tincture, to the one given at bed-time, generally procured the patient a refreshing sleep and an easy night.

In some cases, where the frequent stools and severe griping and tenesmus were uncommonly distressing, so as to exhaust the patient in an alarming manner, I was tempted to give an opiate by the mouth; and, although it always procured considerable relief, which the patient was always very sensible of and of course became eager for, I never gave opium by the mouth in this disease but with reluctance, I always thought it disposed the bowels, after

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its action, to more severe griping and less free stools. In some cases, however, it was really indispensibly necessary, and in convalescents, where there is chiefly debility of the intestines, with little griping and free stools, opium will be found on many accounts preferable to any other medicine.

When the pain in the bowels is very distressing, this will be generally relieved by warm fomentations, or the warm bath frequently repeated and continued for a sufficient length of time. When these however fail, relief will be pretty certainly obtained, from the application of a large blister to the umbilical region—and the good effects of this remedy appeared to me often remarkable, and when the griping returned violent after the first blistering, a second or third was at the interval of some days occasionally repeated, and always with very striking benefit.

To this subject I was led to pay some attention from having seen in notes added to first lines that well deserve to have been written in letters of gold—the good effects of blistering in griping doubted—and that the advantages said to arise from this might probably be obtained from the purges and diluents. The effects of a large blister however, are in general more evident and decisive than that of diluents or purges, and I see indeed but little room or deception here—From many and repeated trials I have been long persuaded, that blistering, particularly when repeated, has procured most evident alleviation of the severe griping, when such relief could not be obtained by any other means; and from analogy it appears to me, to be a very rational remedy, by its taking of in some measure the inflammatory disposition of the internal parts, and may also be useful here perhaps by favouring the more ready absorption of the mercury.

Generally, after the use of mercury and other remedies mentioned the patient gradually recovered without other medicines. In other cases however the griping, frequent stools and tenesmus, continued for weeks; and all that was done in such cases, was to keep the patient's bowels pretty easy by mild laxatives and occasional glysters, in which some opium was dissolved—A very useful medicine, where the stomach will bear it, is castor oil. We were however in such cases generally in the habit of giving a dose of pills, consisting of three or four grains of calomel with six or seven of rhubarb every second or third day, as occasion required. It sometimes happened that the calomel given in this manner did not operate sufficiently; or, where the patient was considerably debilitated, it even appeared to act too roughly, and then nothing seemed to answer so well as a gentle dose of the purging neutral salts; these always procured easy stools, and left the patient in an easier state than any other laxative.

Rhubarb alone always appeared to me an improper remedy in this disease; perhaps it should not be given at all, and I could never observe any advantage to be derived from ipecacuana.

When the bowels continue long in a relaxed state, and the patient does not recover his strength readily, some astringents or tonics may become necessary; but the mildest are certainly the best. The bark, particularly the *Angustura*, the *Quassa*, or *Simarauba*, may be tried; but gradually bringing the patient to a nourishing diet with a little wine, will in general supersede the use of other tonics. Indeed it was only in the more violent cases, or where the mercury was sluggish in its operation, that other remedies were thought requisite. Those were considered merely as palliatives in the complaint, or auxiliaries to the grand remedy, mercury; the effect of which, in dysentery, is not a little remarkable. Its *modus operandi* in this and other diseases, where there is great debility, and where we might suppose the symptoms would be thereby increased and aggravated, may be difficult to account for. The quantity diffused at any time in the fluids, is probably too small to have any share in altering their chemical properties; and, by saying that mercury, in the cure of diseases, excites a peculiar action in the system, incompatible with the decaised one, is going as far perhaps as we are authorised at present. Its influence in syphilis, in chronic rheumatism, in yellow fever, and in dysentery, seem at least to justify the expression.

I shall now conclude these observations with a few words on the dissection of those I have had occasion to examine after death at Bombay. Six bodies were opened, and in all the colon and rectum appeared to be the principal seat of the disease. The first case was a man who had been ill two months previous to our landing. The internal surface of the great gut had an irregularly rugous appearance, and was considerably increased in thickness. The mesenteric glands were indurated and enlarged; and a cyst, containing a considerable quantity of purulent matter, was found in the right lobe of the liver. Here it may be proper to say, that this was the only case that was examined, where the disease had been of long standing, all the others having died in the second or third week of the disease, or at least from the time they had relapses. To save repetitions, the following were the general appearances:

The internal surface of the colon and rectum was covered with irregular ulcers, of the size of crown and half-crown pieces. In some, this intestine appeared as if the villous coat had been peeled off; and its substance was at the same time much increased in weight and size. The external surface of the great intestine had generally interspersed over it gangrenous-looking spots; had lost its texture; was flaccid to the touch. In some the gut was completely mortified, and in one the feculent matter had escaped into the cavity of the abdomen. In this case the mesenteric glands were very considerably enlarged; the liver was indurated, and had little abscesses formed  
throughout

throughout its substance; and the very offensive putrid smell arising from the opening this body, was intolerable. In some too, the small guts had not escaped, for portions of the Illium appeared not merely to have been altered to a darker colour, and thickened their substance, but also the internal surface partially affected with ulcerations.

In one subject a considerable quantity of bloody serum had been poured out into the cavity of the abdomen.

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*Analysis of DR. JACKSON'S interesting Work on Idiopathic Fever; or "An Outline of the History and Cure of Fever, Endemic and Contagious, &c."*

[Concluded from our third Number, p. 225—230.]

CHAP. III.—*On the remote Causes of Fever.*

"IT is perhaps no longer disputed, that those derangements of the human frame, denominated fevers, whether *endemic* or *contagious*, owe their origin to two\* sources only, viz one natural and generally diffused over the surface of the globe, the other artificial and insulated: it is difficult, in many cases to define their limits precisely, but the matter is of such importance as to demand an attempt.

"The *first*, a vegeto-animal source, usually called *marsh miasma*, occupies the wide extended bosom of the earth; it is generally diffused in the atmosphere, abounds more in some situations than in others, and is rendered more or less active by a great variety of causes,—causes sometimes of regular connexion in the system of the world, sometimes apparently of accidental occurrence,—at one time obvious to the senses, at another obscurely perceived, or altogether imperceptible. This cause produces disease, and frequently such a derangement of the system as is incompatible with life; but it is lost in its first operation.

"The *second*, derived from an animal source, more expressly from an altered condition of the living human body, is confined in its sphere of action, communicated only by contact, by near approach, or by a medium

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\* DR. ROBERTSON says, There are four great and dreadful sources of febrile infection, viz. marsh miasmata, jails, hospitals, and ships; and I avow that the infection of the three last sources is one and the same, consequently that the fever is the same; that fever from these last sources differs in no essential respect, from fever arising from the other grand source of febrile infection; and, as the same mode of treatment is equally successful in all of them, I am led to conclude, that febrile infection is the same throughout the universe; and that the cure depends upon one invariable philosophical principle. See p. 8, 59, 188, &c.

connected with the source. This cause produces disease, and under that disease such a derangement of the system arises, as begets a multiplication of the original cause, which, extending itself to a certain distance from the source, propagates similar disease through a series of subjects.

“ The *first* source affords the cause of the numerous forms and degrees of endemic fevers. These are observed to prevail in certain climates, in certain seasons, and in certain local situations of the same climate more than in others; they are, upon the whole more frequent in tropical and warm countries, than in high latitudes and frozen regions; they are more frequent in spring, and particularly in autumn, than during the other periods of the year; and they are uniformly more frequent on sea-coasts and plains, near swamps and rivers, than in the interior and mountainous parts of a country.

“ But besides that the scndemics are generally periodical, and in some manner connected with the causes which influence the *vegetation of plants*, they sometimes also appear irregularly and epidemically; they affect strangers, more generally and more violently than the natives of the district; and men under constant and active labour, less than those in a state of rest, or after desultory exertions.

“ The source of this cause is known, and many of the laws which influence its action are clearly ascertained, but little or no progress has, as yet been made in the discovery of its intimate nature and properties.—In a given time after exposure to the known source of the disease, more frequently at the expiration of a fortnight than any other period, the healthy action of the human body becomes suspended, impeded, or disturbed in different degrees; action of a new form arises, generally or locally exerted according to circumstances, which continues for a certain and stated time; it however often happens that the immediate action of the cause, or the effects consequent to that action, speedily and irrecoverably derange the organization of the frame, so that death ensues.

“ Endemic fever is almost uniformly prevalent where vegetation is luxuriant, at least, where the requisites of a luxuriant vegetation greatly abound. In this manner, as vegetation is more luxuriant in tropical and warm climates than in temperate and frozen regions, so notoriously is endemic fever,” p. 105. This argument in the following pages is placed in a variety of light, by Dr. Jackson, and urged with a perspicuity and clearness of reasonings, we will not say peculiar to our author, but we may say, uncommonly gratifying to a medical reader; though perhaps the subject is not so important in this climate as that of the causes of contagious fevers. He concludes his remarks on this *first* source of the causes of idiopathic fever, with the following short recapitulation:

“ It has been observed that this cause is lost or changed in its first operation.

tion. It often rapidly destroys life; but it begets no process in the human system by which it can propagate itself. In short, endemic fever may be, and often is *epidemic*, but it is not *contagious*. The source of endemic fever is a *natural* one, common to the whole earth; the source of contagious fever is *artificial*, produced by arrangements which take place among men in certain states of society."

On the causes of contagious fever, Dr. Jackson, p. 109, says,—

"The cause, and consequently the disease, is found in large, particularly in manufacturing cities, more especially among classes of men confined to sedentary employments, slothful and dissipated in habits, oppressed, with poverty, clothed in rags, confined and crowded in their apartments, and suffering from want of fuel. It is common in jails where men are crowded together, deprived of the benefit of pure air, suffering hardships of body, with various anxieties and afflictions of mind.

"It is on the same account, frequent in work-houses or poor-houses. It sometimes originates in, but is often transplanted to hospitals, where it spreads with rapid growth. It appears, on some, though on rare occasions, in the country among the families of poor cottagers. It is not peculiar to season or to climate, but it appears oftener in winter than in summer, and, in temperate than in hot climates; yet, as it depends every where upon adventitious and artificial causes, it sometimes commits ravages in summer, and it has even appeared in the torrid zone.

"Such are the sources from which this disease originates, and the situations in which it is most frequently found. Artificial constraint, and confinement in a narrow space, by inducing a *new process of secretion* in the living system, seem to be the leading instruments in generating the cause. The organization of the human body is proved to be such, that it does not preserve a healthy action, unless under pure and free air; nor does it possess vigour, unless under *frequent changes of place, and active exercise*, calling forth the exertion of the moving powers. It indeed appears, that without these essential requisites, the actions which support life are not only languid, but they become diseased, or fall into unnatural movements; in consequence of which, the ordinary secretions are so changed, that though the actual existence of fever be not apparent, something noxious seems to escape from the system, which, to a certain extent from its source, effects the health of others. In this manner it has often been observed, that persons from jails, work-houses, and other places of artificial confinement, though not at the time, and what is still more remarkable, though not observed at any period to have laboured under formal disease, carry in themselves or in their clothes, causes which occasion fever, in its most formidable aspects, to those who approach near to them. It is farther to be observed, that the cause, thus gene-



generated, speedily produces a fever in the body of a healthy man ; and that the fever so produced is accompanied with such alterations in the secretions of the system, as to generate a cause, occasioning a similar disease, through an endless variety of subjects. This is a curious and an important fact. The fever, which owes its origin to certain connexions with vegetable and *dead* animal matter, shows no disposition to propagate itself ; the fever which arises from a connexion with the living human body, in a diseased state, multiplies with great activity ; frequent ablutions, change of place, and change of clothing, under a dry, warm, and freely-circulating air, dissipate the cause, but do not change the nature of the disease. The cause is condensed, or rendered more powerful by states of the air, connected with cold and moisture ; it is dissipated and weakened by the opposite. It is not extinguished by intense degrees of cold ; but, if adhering to the walls of apartments, or lodged upon clothes, it requires heat and moisture to call it into a state of activity. It is more powerful in its condensed, than in its recent and diffused state.

CHAP. IV. §. 1. *Cases of Contagious Fever.*—§. 2. *Cases of Endemic Fever.*

IN this chapter, Dr. JACKSON gives about twenty cases of each kind of fever, as some of the vouchers for the general doctrines and inferences contained in the work. The custom of giving a few cases on occasions similar to the present, is so common, that we presume Dr. Jackson thought himself bound to comply with it ; but we think it seldom tends to promote the cause of science. It is almost impossible for any observer to detail cases with a sufficient degree of minuteness, for others to frame general principles from them so correctly as the observer himself. And since we consider Dr. Jackson's general principles and conclusions as the most valuable parts of his work, we shall pass over these cases with only observing that, for the purpose of enabling readers to deduce general doctrines, they are not related with a sufficient detail of the doses of medicine, state of the heat, pulse, or tongue.

At p. 147 in this chapter, some appearances of dissection are given, of patients who died in consequence of the endemic fever, but these point no further than to conjecture on the cause of death.

CHAP. V. *Symptoms of Fever.*

“ The general character of that class of diseases denominated *febrile*, is not, perhaps, so comprehensively and so explicitly defined in the writings of authors, as to include and express every condition of febrile action.—The horror, rigour, and accelerated pulse of authors, are only accidental circumstances ; but an impeded or suspended—an irritated or irregular action—a changed condition of the state of the moving fibre, arising suddenly and acting generally, marked by its effects upon the functions of health

health and vigour, seems to constitute the primary and constant feature of the operation of a febrile cause.\*

“ The cause of endemic and contagious fever is radically different, but the mode of action on the human body is in many respects similar. In describing the gradations and forms of this action, it will be convenient and useful to class the appearances, according to certain general and prominent features, usually combined together, and seemed to depend upon certain conditions, or primary modes of operations. The deviations from health, arising from the action of the cause of fever, are different in kind and degree, and are differently combined, but upon the whole, the principal modes may be referred to the action of the moving fibre, diminished in force and energy, suspended or impeded in the usual range of freedom, disturbed in time, more frequent or more slow; or to a mode of action irritated beyond the usual degree.

“ These modes, besides being different in kind and degree, are also such as to deserve the name of general at one time, the name of partial at another; sometimes they appear generally in the whole body, though different in degree; sometimes more particularly in one system or series of parts, sometimes chiefly in one organ, or the functions of one organ, and at other times in parts of an organ only, and partially in its functions.”—p. 162.

SECT. I.

Dr. Jackson then proceeds to enumerate the symptoms which occur in each variety of febrile action, and begins with the *contagious* fever, the symptoms of which, he thinks, may be naturally divided into *three classes*, viz.

CLASS I. In which *suspended or impaired action* is more conspicuous.

This class admits of two varieties, depending on degree.—1. Slight in degree.—2. Aggravated in degree.

CLASS

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\* Dr. ROBERTSON states the general character of idiopathic fever in these terms :

“ Whenever men on board a ship, or in a regiment, or any society or family, complain of being seized with chilliness, or alternate chills or heats, head-achs, sickness at stomach, universal pains, or as the sick express themselves, *pains all over them; or pains on all their bones, or joints; especially in their loins and back, with less or more debility*; and if their countenance is at the same time obviously diseased, whatever the other symptoms accompanying these are, I can, from experience, assure the reader, that a most virulent infection is present.” p. 59.

On the causes of fever, Dr. Robertson says, “ Whatever has a tendency to debilitate the system, may either be a remote or a proximate cause of fever, according to the constitution of the patients. A sufficient reason may be assigned for many people being seized with fever at the same time, which is, their being exposed to the same debilitating powers of heat, cold, drought, or wet; or sudden changes of these.” p. 88.

CLASS II.—In which *irritated motions* predominate.

CLASS III.—In which *particular organs or functions* are deranged.

The symptoms in the first class, when *slight in degree*, are

“1st. *Slight in degree.* The commencement of this form is usually marked by a sense of disagreeable feeling at stomach, nausea, vitiation of taste, coldness of long continuance, an increased sensibility to cool air, or want of warmth, rather than horror or chilliness, dimness of sight, giddiness, dullness of perception, languor, pains and aching of the joints, impaired and feeble action of the limbs, a sad, desponding, and lifeless aspect of eye and countenance; the pulse is small, sometimes, when superficially attended to, seemingly not much changed from its natural state, carefully examined, appearing to be feeble, languid, and confined,—sometimes, but not always, more frequent than natural, sometimes, but rarely, more slow: the degree of heat is moderate; judged by the superficial touch of the surface and extremities, it does not seem to be above the natural standard—upon the hollow parts of the trunk, or on pressure, it appears to be pungent, though not strong: the state of the skin is usually dry, sometimes is clammy and greasy; secretions are impaired, with great deficiency of alacrity in the functions.

“The above foundations of derangement being apparent in the first twenty-four hours of the disease, the greater number of symptoms increase in degree, or suffer some change of form during the continuance of the course: the appearances of the tongue are irregular—sometimes the tongue is moist and little changed; sometimes it is rough and moist, or with a thin coat, firmly adhering, sometimes white, slimy, and foul; it is seldom dry in this stage of the disease, but it is not unfrequently covered with a ropy saliva, smooth, and without papillæ. Some degree of nausea is often present, but there is seldom any vomiting. The body is sometimes open, sometimes bound; when open, the evacuations are, for the most part, small and ineffective: there is usually an unpleasant taste in the mouth, or want of taste; almost always a dry or a greasy skin, a sullen aspect, a pulse not much changed in time, but feeble and unenergetic in the stroke; pain of the limbs and joints, like the aching in the cold stage of intermittent, sometimes tenderness of the touch; bad rest—dreams and wanderings often disturb the sleep. At a certain period, sometimes on the third, oftener on the fifth, and still oftener on the seventh day, these symptoms undergo a great and material change; the action of the system, particularly the action of the arterial system, develops, secretions are restored, and the signs of health return: or instead of health, a new train of morbid action commences. The cause, which had hitherto only in a slight degree impaired the energy of the vital functions, either by a sudden accession of power, or by an increase of aptitude in the subject, acts with vigour, and sometimes rapidly overwhelms life. Where the action is general in the system, the progress is usually more gradual, and the term of existence is longer protracted; where the action is partial, the function of parts become oppressed, and death takes place speedily.

“The signs of gradual extinction are chiefly found in a pulse, small, weak, sometimes frequent, and always feeble, wrapped up as it were in itself, retiring from the surface and extremities of the body, irregular, intermitting, and finally failing; in a corresponding decline and failure of animal heat, in a state of skin dry and impervious, sometimes greasy, clammy and dirty, sometimes purplish or livid; in secretions impaired or suspended, in drowsy torpor, but diminished sleep, with an imperfect possession of intellect. The tongue, during this progress, particularly where the progress is not rapid, is often black and dry, covered with a foxy pellicle, sometimes smooth, clear, and glossy; the lips too are generally dry, and a black crust or pellicle sometimes covers the teeth and gums. Where the action is partial, the appearances are more irregular:—irritated motions are variously combined with suspended or diminished energies, and, according to circumstances, the symptoms are of great

great variety, and in some respects opposite in their natures. In one case, the head is principally affected:—delirium, different in degree, and different in kind, occupies the chief notice; in another, affection of the moving powers gives rise to a multitude of alarming symptoms, startings, tremors, convulsions, &c.; the chest suffers principally in one, so that the functions of the lungs become suffocated and oppressed; the stomach and alimentary canal have a great share of the sufferings in all and at all times; in the latter stages, these organs often seem to lose power in a more especial manner—the abdomen becomes inflated, involuntary purging takes place, accompanied, on many occasions, with involuntary or unconscious discharges of urine.

“ It likewise happens frequently at this period of change, that, instead of cessation of disease, a new train of morbid appearances arise, which are different in aspect from the preceding, and lead, for the most part, to different issue; they are chiefly conspicuous in the changed action of the vascular system; the pulse, from small, weak, and confined, deep, and as it were sunk in the arm, becomes gradually open and full; the whole system seems to fill and expand, or the tide of circulation flows freely to the surface and extremities of the body, the mind also becomes cheerful, and even gay, delirium of the gentle, but lively sort, is a frequent occurrence, and often appears to be a leading feature; sleep is sound, or disturbed only by pleasant fancies and wanderings, the energy of the functions is restored, the secretions resume their natural course, and marks of crisis are generally decided and final. During this gradual progress to health, the tongue is usually dry; a coat or covering forms upon it, becomes thick, and separates at the critical period, most usually the fifth or seventh day from the new train of action.

“ *2d. Aggravated in degree.* Appearances, in the more aggravated degrees of this form of febrile action, vary according to the series of parts principally affected—the different shades are painted in the countenance. The signs of the commencement are not very different from those of other fevers, viz. disagreeable sensations at stomach, nausea, flatulence, listlessness, languor, feeble action of the moving powers, sense of cold, or want of natural warmth, head-ach, from heaviness and confusion, or giddiness (as the soldier usually terms it) to a degree, which gives the impression of being knocked down by the blow of a hammer—a stupor like that of deep intoxication—a total inability of holding up the head. The appearance of the eye and countenance indicate strongly a material deviation from health, but an accurate picture is not easily conveyed in words: the eye is sometimes glossy; the look vacant and idiot-like, torpid, sad, and desponding; the countenance collapsed, dry, and withered, like a plant nipped by frost, or failing from want of rain,—sometimes flaccid and dirty, as if washed in greasy water—sometimes full, swollen, torpid, and inanimate, like a statue—sometimes lurid, dark, and grim, resembling a piece of mahogany; this last is often connected with heavy breathing, deep sighing, and stricture of the chest.

“ The symptoms above-mentioned appear in the first twenty-four hours and increase in degree, according to their several forms, for different spaces of time—three, five, or seven days. The countenance, during this period, becomes daily more flaccid, withered, and dry, more dirty and greasy, more swollen and inanimate, more lurid and dark; in all there is a dusky hue, with a lighter or deeper shade of yellow; the changes of the eye observe the same rule of progress—the veins become large, and the motions are languid, with considerable changes of colour; the pain of the head, if severe in the commencement, is often changed at a certain period, to a sense of mazziness or confusion, a want of power to command thought. There are sometimes mutterings and wanderings during the night, with want of sleep; but delirium (properly so called) is not common in this stage; where the course is rapid, it sometimes precedes convulsion; it is often the sign of change of action, and marks the commencement of a developement of the energies of the vascular system. The pulse in this form of fever does not offer much information to superficial observations; it is many times little altered from what it is in

perfect health, sometimes neither more frequent nor more quick, but generally, when minutely attended to, less expansile, without force of contraction, or free dilatation; a want of energy of stroke, a defect of irritability, seems to characterise it, when closely examined—cursorily noticed, it often seems neither small nor weak. This nearly natural state of pulse continues, with more or less variation, for some time; at a certain period, it becomes frequent, quick and active, free and expansile; or the torpor increasing, it wraps itself up, withdraws from the surface and extremities, and finally fails. The state of animal heat, another of the signs from which an opinion is usually formed of the nature and degrees of fever, affords little remark to common notice. In touching the arm lightly, the heat seldom seems to be increased—in pressing it closely, it is often found to be caustic and pungent, unpleasant, and differing from the nature of warmth; it is deep-seated, irregularly diffused, concentrated about the præcordia, deficient in the extremities. The skin, corresponding with the aspect of the countenance, is sometimes dry and impervious, flaccid and withered, sometimes dirty, greasy, and clammy; sometimes livid, and in a manner marbled about the tendinous parts, the knees, feet, and hands, bespotted with petechiæ on some occasions, and on many fore, or tender to the touch: gangrenous spots are not uncommon on the feet, hands, knees, nose, and ears; extensive and large mortifications sometimes make their appearance on other parts; pains or aching, like those in the cold stage of intermittents, are common and distressing. Some idea of the state and progress of fever may be, and usually is, formed from the aspect and condition of the tongue. In several instances, the tongue does not appear to be materially changed, being moist, and with only a thin covering of mucus; in others, it is moist, smooth, and without the ordinary prominence of papillæ,—it is sometimes rough, but cannot be said to be foul; at other times it is covered with a mealy milk-white paste, of different degrees of thickness; the mouth overflowing, at the same time, with aropy saliva;—similar also to the aspect of the countenance, the tongue is sometimes torpid in its motions, cold and pale, or large, swollen and livid, or lead-coloured. In the progress of the disease, the coat, by which the tongue is covered, usually becomes thicker, sometimes dry, rough, brown, and even black: about the period of crisis, termination, or change, this covering loosens and separates at the edges, and at last through the whole extent; the tongue thus becomes clean; but if the disease runs on through another period, it turns rough, dry, often black, covered with a black crust or pellicle extending sometimes to the teeth and gums; sometimes it remains clean, smooth, glossy, red, and parched.—Thirst often bears a correspondence to the state of the tongue and fauces; yet thirst is sometimes intense, without the corresponding appearance, or inconsiderable, where according to the ordinary rules it would be supposed to be great. The taste is changed, or depraved; there is seldom a relish for food, though food, at least spoon-meat, is sometimes swallowed with indifference; nausea is not uncommon, but vomiting is rare; yet vomiting sometimes happens in consequence of a change of determinations. The functions of the alimentary canal are much disturbed; in some cases there is costiveness, even resisting strong purgatives, in others there is purging, but the evacuations are seldom effective, they are watery or small; severe gripings or pains are not uncommon: fullness, tension, and inflation of the hypochondria, and, towards the latter periods, involuntary stools are among the ordinary appearances. Secretions are generally diminished, and among these, the secretion of urine is scanty, with complaint of pain, and difficulty in rendering it. There is usually a want of rest in this form of disease, at least a want of refreshing sleep, but anxiety, tossing and change of posture, are by no means common; there is, however, on many occasions, a sense of stricture on the chest, a dry and teasing cough, often alternating with affection of the head.

“The foundations of the above derangements being laid in the commencement of the disease, the structure advances to a given point, with different progress. Sometimes on the third, oftener on the fifth, and oftener still on the seventh, the action of the system becomes excited, the powers of life emerge

emerge, and crisis takes place; or fever being in some manner suspended, sufferings abate or cease, recovery goes on for a few days, when diseased action recurring suddenly, life is overwhelmed or brought into danger; or further, instead of termination or suspension of morbid action, the cause seeming to receive an accession power, or a change of direction at the above periods, the vital energies become generally or locally oppressed, and death is the consequence.

“ **CLASS II.—Irritated Motions.** The primary action of the cause of fever is obscure; but, at a certain and early period, action, irritated, irregular, and apparently increased, is so conspicuous in the vascular system, with unusual commotion of the moving powers, as to characterize a form of fever, which deserves particular consideration from the multiplied variety of its appearances, and the numerous accidents which happen to life from its tumultuary disturbances. The attack of this form of disease is usually sudden, the sense of cold or even horror is considerable, and frequently alternates, during the first hours with sensations of burning heat; the head-ach is often intensely severe, particularly the pain of the forehead and temples,—it is frequently preceded by giddiness, vertigo, and temporary loss of sight; the eye is often muddy, confused, and red, staring and prominent, it sometimes seems to blink or shun the light; the countenance is flushed, or rather overcast and grim, often agitated and confused; the tongue is generally foul, covered with a mealy or milk-white paste, when moved it is sometimes tremulous; the thirst is great; the sensations at stomach unpleasant; nausea is not unusual, and even vomiting occurs sometimes; pains in the legs and joints are severe; pains shooting along the legs, shoulders and arms in repeated explosions, or with sensations of gnawing, and as it were, tearing, are sometimes extremely distressing; a general soreness or tenderness of the touch is not uncommon, in all cases, however, different in its nature from the tenderness or pain of rheumatism; the uneasiness and anxiety are frequently great; agitation, tremors, startings, convulsive motions, stricture of the chest, irregular evacuations of the bowels, with gripings, severe pains and spasms are occasional, but fluctuating symptoms; the skin is usually hot and dry, when the skin is pressed closely, the heat often appears caustic and fiery, deep, or concentrated; it is unequal in different parts of the body; the pulse is usually quick and frequent; irritation and motion are increased, but force and energy are wanting; the usual freedom of the stroke is confined; secretions are irregular and generally impaired.

“ These symptoms, which appear in the first twenty-four hours of the disease, increase with some variety of progress to certain periods, at which time, changes or terminations, sometimes favourable, sometimes fatal, are observed to take place. The modes follow the ordinary rules in fever; in one case, the action of the vascular system becomes vigorous, the arterial pulsations expand and final termination is the consequence; in another, the irritated motions of the arteries abate, or cease, the course of the disease seems to be suspended, some portion of health returns; in some instances, imperceptibly established, in others suddenly deranged, by a recurrence of morbid action; in a third, the irritated or increased action subsides rapidly, while the vital energies being exhausted generally, or organs locally destroyed, death ensues with more or less variety of appearance. The different events are, in some measure, connected with certain days in the following manner:—in the more concentrated forms, the irritated action often subsides on the third day, sometimes fatally, sometimes, indeed, with hopes of returning health, but with still greater suspicions of sudden and dangerous recurrence. In forms of somewhat less violence, the changes of the fifth have similar issue. The seventh is the great critical day of regular fevers of moderate violence; the terminations are oftener final, or changes more distinctly marked than on the others; at this period the powers of life subside rapidly, emerge speedily, or a new train of action commences, in the progress of which the action of the vascular system is developed, and health is finally established.

“ The appearances, in this fever of irritation, are as they might be expected to be, very irregular; pains and spasms in different parts of the body are

severe, the pulse is irritated, and sometimes excited to a high degree of action, the heat is ardent, caustic; and sometimes making an impression like actual fire, the thirst is great, the tongue dry—sometimes rough, foul, and black; starting tremors, convulsive twitchings, are frequent, the breathings often oppressed, stricture and affection of the breast frequently alternate with delirium and affection of the head: vomiting sometimes occurs, prodigious in quantity and irrepressible, accompanied with a small pulse and cold skin; on some occasions the same is the case with purging; the urine is suppressed, and sometimes it is bloody; the functions of the liver are also suffocated in some instances, or there are appearances of deep jaundice; hæmorrhage from the nose, though not common, sometimes takes place, and gangrene or blackness, sometimes of considerable extent, appear on the extremities, or other parts of the body.

“CLASS III. *Local Fever.* The cause of fever generally affects the system extensively, but on some occasions the principal action seems to be excited upon distant organs, or upon the functions of organs; the dysenteric and peripneumonic forms are the most common and the most formidable. In these forms, pains, spasms, and marks of irritation are sometimes conspicuous; sometimes, more particularly in the dysenteric form, the action of the arterial system is very little disturbed; the course of the pneumonic form is usually the most rapid, the dysenteric sometimes continues seven days or a fortnight, without very materially impairing the functions of the general system: but it is common to both, that the causes, which change or repress the local disease, seldom fail to disorder the existing economy of the frame: thus peripneumonic fever, or affection of the chest, is often changed to delirium, or affection of the head; dysentery changed, or suddenly repressed, is also followed by general fever, delirium, spasm, and convulsion.

The above are the more common forms and appearances of the fever, which prevailed among the British troops, in the different services on which the author was employed. It was remarked before, that the principal distinction of fever consists, in an assemblage or train of motions irritated to an unusual degree, or deficient in ordinary force and energy:—these are not however so pure and simple in all cases as here described; one character may be observed to prevail upon the whole, but it is more or less mixed on different occasions;—the motions, for instance, seem irritated in one part of the body, and torpid in another at the same time, and the aspect of the general mode of action changes repeatedly during the continuance of the disease. In the commencement the motions are sometimes greatly irritated,—the fever, in common language, runs high; at a certain period this irritation subsides, and a course of deficient energy or torpor ensues; on the contrary, torpor and deficient energy are sometimes conspicuous in the early stage; at a certain period the motions become irritated, the action is increased, the powers of the circulating system expand, and the energies of life are restored.

“It is not pretended to determine the causes upon which the varieties of disease action in fevers depend, but it will not be without use to notice the circumstances, with which certain modes are primarily connected, or from which they seem accidentally to change. In encampments, in cool and wet weather, under deficiency of clothing, tedious and irksome confinement, the *dysenteric* is often the most conspicuous form; this often ceases on removal to warm and dry lodging;—genuine fever then arises;—in crowded barracks, in crowded ships, among subjects depressed in mind, inactive in body, the form of fever is usually a form of *deficient energy*,—of longer and shorter duration, and greater or less intensity, according to a variety of accidents; in the most concentrated sources of contagion, as in crowded hospitals, the action of the cause is strong, sometimes representing, in its attack, a form

form of apoplexy, which, where the habit possesses little power of resistance, rapidly overwhelms life. Thus; upon those who live in confined air, and who do not exert themselves in body or mind, the cause of the disease seems to act by an operation of *depression or suspension*, and death takes place often without much struggle or disturbance; in those, who, exposed to the same cause, go abroad into the open air, and, more particularly, who are active in body and mind, the febrile motions are *irritated, irregular*, frequently increased in force, terminating in established reaction, or destroying the organization of parts by violence of effect. In crowded hospitals, where dirt, nastiness, and bad air prevail, the relapses of the disease are frequent; the forms indicate deficient energy in the general system, or local derangement from accidental weakness; the events are often unfortunate. Under the free ventilation of air and the advantage of personal cleanliness, the action in relapse is irregular; pain, spasms, and purging, come suddenly, and suddenly cease; intermitting forms also occur often, but they do not observe the same regularity of period as is usual with pure endemics."

#### SECT. II. *The Symptoms of Endemic Fever.*

This admits the following distinctions, viz.

1. Into a form, where irritation, tumults, and excitement of the vascular system are chiefly conspicuous in the early period; local derangement and disorder of important functions in the latter.
2. Into a form of fever, where the action of the vascular system appears to be deficient or oppressed, the moving powers impaired in their energies, or rendered irregular in their motions.
3. Into the scorbutic, or low form: And 4. Into fevers of type.

I. "The *first* form occurs most commonly in vigorous and athletic habits, and it often occurs, under the circumstances of preceding desultory exertion, or transgressions of the rules of temperance. The invasion appears upon a general view to be for the most part sudden or instantaneous; but, upon accurate enquiry, languor, head-ach, or some obscure deviation from health, will usually be found to have preceded the formal attack, by twelve hours, sometimes by a long space. Head-ach, if not actually the first, is among the first symptoms of this, as of other fevers; and the nature of the head-ach is different in different subjects; sometimes it is almost insupportable, confined more particularly to the forehead and temples, accompanied by sensations of tightness over the eyes, turgescence, and starting; sometimes the pain is more generally diffused, dull and obscure; but it, for the most part, differs from the head-ach of ordinary causes, though the difference is not easily defined. Head-ach is almost always present in the commencement, in some degree or other; it sometimes abates in the course of the first twelve hours, frequently in the first forty-eight, and almost always before the termination



mination of the third day. During the severity of the pain, the forehead is sometimes hot and burning, sometimes cold and clammy. It happens also, and not unfrequently, that together with, or instead of head-ach, the attack is ushered in by giddiness, vertigo, drowsiness, or stupor-like deep intoxication: fits of apoplexy, hysteria, or tetanus, are observed sometimes, but they are upon the whole rare, and by no means characteristic of peculiarity. The stomach, one of the organs primarily and principally affected in the commencement of fever, is for the most part peculiarly affected in the early stage of this disease; vomiting is not common, but nausea, with a taste of copper in the mouth, is usual; as are anxiety, flatulence, and other distresses, not easily described, as not referable to distinct heads. The sensations of listlessness, languor, and aversion to motion, common in the commencement of fevers, are present here, but have not any peculiar qualities. When the invasion is sudden, the debility or loss of power is more complete. Alternate chills and flushings of heat are not unusual; in some cases they occur at intervals for the first twelve hours; the sensation is unpleasant, but the cold is seldom strong, or amounting to rigour; in others, chills are not perceptible, the sensation of heat prevailing from the beginning. Together with these, the eye and countenance are confused and agitated, the pulse disturbed, frequent, small, hesitating, or seemingly oppressed under the immediate attack.

“ The following appearances are noticed during the first twelve hours, though with some difference of order and degree in different subjects. The eye and countenance express some marks of peculiarity, known to actual observers, difficultly conveyed in description. The eye is sometimes watery, sad and desponding, sometimes agitated, red, and disturbed, as if suffering from the smoke of green wood; the pupil sometimes appears to be preternaturally contracted, sometimes preternaturally dilated, but its appearances cannot be supposed to afford a criterion or distinguishing mark of the disease; the eye-balls are often much agitated, staring, and protruded. The countenance is usually, but not always flushed; it is generally clouded, agitated, expressing a secret suffering of distress, not indicated by other external signs. The tongue is generally white, slimy, and moist, sometimes apparently clean, or covered with so thin a covering of mucus, that the red surface below shines through it, forming a colour resembling that of lead, sometimes it is smooth, it is seldom dry and rough. Thirst is irregular and uncertain; where nausea prevails, it is seldom great; yet intense thirst and nausea sometimes meet together. The pains in the joints, limbs, and back are often severe and distressing; they resemble pains in the cold stage of intermittents; the pains of the calves of the legs are sometimes acute, the muscles seeming to be in a certain state of spasmodic action. The pulse is usually frequent, small, confined,

confined, concentrated, or deep, as opposed to expanding and open. It is sometimes agitated, vermicular, confused in an uncommon manner, almost always it is much disturbed. The heat, during the first twelve hours, seldom appears great, if the skin be touched lightly; more closely pressed, the sensation of heat is caustic and pungent. The skin is usually dry; if damp, it imparts the idea of a spasm existing on the surface, for perspiration, with expanding pulse and relief from sufferings, rarely takes place. If the skin be moist, the moisture is clammy, as in agonies,—different from the warm and fluid moisture, which follows a relaxation of extreme vessels. To estimate this properly is a matter of some importance, in forming an opinion of prognostic. In those sweats, which terminate the paroxysms of the remitting fevers of natives or seasoned men, the pulsations of the arteries become full, expanding, and, as it were, rise to the surface; the perspiration is fluid, copious and general, with softness of the skin, and with the sensation as if a load of weight and distress were removed from the system; secretions are, in some measure, restored, and the countenance becomes to a certain degree cheerful and serene. In the abatements which take place towards the close of the first twelve or twenty-four hours of this disease, the appearances are often flattering, and sometimes so ambiguous, as to deceive an unexperienced practitioner; but the following marks will, in some measure, help to note distinction; the sweat is seldom copious and general; it is, for the most part, confined to the upper parts of the body; it is not usually fluid and free, but has something of clamminess joined with it; the pulse does not expand; on impression of existing spasm or confinement,—of imperfect dilatation and feeble contraction of the artery still remains. Yet, in some instances, the changes are so material, the relief so evident, that it is only after much experience, that a person is brought to doubt of the presence of remission; indeed, in people accustomed to climate, such abatements may safely be esteemed remissions, and acted upon as such; in Europeans, newly arrived in warm latitudes, they require to be regarded in a favourable light with much caution.

“ About the termination of the first twelve hours, the tumult and agitation described above in some degree subside; the appearance of the eye, though not serene, is less wild, and expresses a sensation of relief; the violence of the head-ach diminishes, or the nature of the pain changes; the countenance brightens; the patient, even the physician, is often flattered with hopes of remission,—but they are fallacious hopes, and seldom of long duration. In the course of a very few hours, at farthest, the symptoms recur with aggravation, and with qualities in some respects differing from the preceding. The pulse which, during the first twelve hours, was usually small, frequent, irregular, or confused, becomes quick, hard, tense, more equal in  
time

sime and force, but confined, or without a free dilatation, or energetic contraction of the artery. The heat of the body, particularly on the head and trunk is burning, fiery, and concentrated; if the skin be touched lightly, it sometimes does not appear to be uncommonly great—pressed closely, it is often so intense, as to be indured with pain, communicating the sensation of actual fire, or of sharp instruments darting into the fingers. Thirst is irregular, much connected with the state of the tongue and stomach; where there is nausea, with a moist and foul tongue, it is seldom great, at least, if there be a desire of drink, there is also an aversion to the act of swallowing: where the mouth and tongue are dry, thirst is generally intense. The pain of the head, which had in some degree abated, recurs again, but it recurs with sensations differing from the former; marks of increased determination are now evident, the pulsation of the temporal, and particularly of the carotid arteries, is sometimes so violent, as to cause the head and neighbouring parts to shake; there is also, a sense of fulness, weight and heaviness through the whole head, sometimes with drowsiness and coma, but without the power of sleeping; the recollection is confused, and not under command, but that derangement of the reasoning faculty, properly called delirium, is a rare occurrence. The countenance is highly flushed, sometimes dark and cloudy; the eye muddy and inflamed; the urine is scanty, sometimes suppressed: the bowels are torpid difficultly moved by purgatives, or moved by starts—the evacuations, watery and in excess do not afford relief; the skin is generally dry, and the heat is unequal—great in the trunk, as formerly observed—diminished, or deep-seated on the extremities. Sighing, deep breathing, anxiety, and undefinable fidgeting, or desire of constantly changing posture, without complaint of pain, or specified object, are common attendants of this stage of the disease; and these undefinable uneasinesses may be regarded as the surest of the existence of concentrated or yellow fever."

Want of room obliges us to refer our readers to the work itself for the remainder of this enumeration, as well as many important particulars in the following forms:—

II. "The *second* form, as observed among Europeans newly arrived in the tropical regions, chiefly occurs among men who lead inactive and indolent lives, who are confined in the less pure air of crowded towns, crowded barracks, or crowded ships, who are under the impressions of ennui, chagrin, and fear, or who are constitutionally deficient in energetic exertions of mind and body. According to the natural qualities of the constitution, the accidental circumstances of the individual or modification of the cause, the disease seems to be at one time characterised by severe local pains, spasms, or tremors, by general and undefinable uneasiness or fidgeting—at another time by torpor, by indifference of mind, and impaired sensibility

bility of body. It is sometimes sudden in its attack, sometimes gradual in its approach.—When it assumes the distinct febrile form, the leading circumstances of its history are the following:—

“ It usually commences with giddiness, even to blindness, pain of the head, faintness, sickness, disagreeable sensations at stomach, weight and oppression, even nausea and vomiting, pains of the limbs, knees, and back, a sense of cold, sometimes continuing for hours, but seldom amounting to the degree called horror; the pulse, for the most part is small, weak, and easily compressed, sometimes, but not always, frequent, irregular, hesitating, and tremulous or creeping; sometimes in appearance tense, or confined in volume, with an impression of obstruction; the animal heat on the surface of the body, is seldom greater than natural—the internal sensation far exceeds; the skin is usually dry; if damp, it is unpleasant to the touch; the feelings are uncomfortable; and the appearance of the eye and countenance indicates a desponding mind;—the countenance is usually dirty and lurid, fallow, like a sickly plant, or fading leaf: the eye sad, but seldom inflamed; it is inanimate, and sometimes glossy: the tongue is sometimes covered with a white mucous coat, sometimes so thin that the red colour shines through it, sometimes of considerable thickness; it is seldom brown, and it is oftener moist than dry; sometimes it is pale, and smooth and clean, the mouth abounding with a ropy saliva: the seat of the pain of the head is generally over the eyes, almost always in the forehead or temples, in many cases so oppressive, as to occasion stupor like intoxication; franguary, or want of power over the urinary discharge, is not uncommon.

“ The head-ach, for the most part abates, or suffers change of form, at the expiration of the first twelve hours; and where tumult and irritation had been conspicuous in the beginning, they generally diminish about this time, and partial sweat, with temporary relief, ensues; yet this abatement is neither constant, nor of long duration, the sufferings and distresses occur in a few hours, particularly the pain of the head, the unnatural appearances of the eye increase, the countenance becomes more dingy and greasy, or flaccid, dry, and withered; the pulse is sometimes more frequent than natural, generally small, and confined, yet in many instances it does not perceptibly differ from the pulse of health, unless in want of energy and expansion; the thirst is seldom great, but the lips are usually dry, the mouth clammy, and the taste depraved; the tongue is for the most part covered with a white mucous paste, generally moist; the sensations at stomach are unpleasant; nausea, anxiety, sighing, and deep breathing are usual. The state of the skin, in this form of disease, deserves remark,—it is dry, withered, and thickens by a rapid progress, becoming impervious, or in a manner cut off from the free current of circulation: the face of things proceeds then very much in one tenor: a torpor, or impaired

sensibility, possessing the functions, the progress to destruction is silent, and often unperceived."

III. In the *third* form, the prominent feature is, an aspect of countenance dark and cloudy, as in scurvy.

" This form of disease appeared principally among those who were removed from a more pure and cool, to a confined and immoderately hot air, whose habits were full, and who were restrained from the active use of their limbs. In this manner it was common under the removal of troops from post to post, or under the indulgences and rest, which usually followed military excursions in St. Domingo.

" The formal attack is sometimes preceded by heaviness and oppression, sometimes the attack, from a high state of health is sudden and instantaneous; the symptoms are common to the class of fevers. Head-ach is among the first; it is intensely severe, or heavy and oppressive, it is accompanied by giddiness, faintness, often by an undefinable uneasiness; a sense of cold is often of long continuance, but seldom amounts to horror; the pulse is usually frequent, small, oppressed, and weak, or without energy of stroke; increase of heat is uncertain, and, where it is perceived, it is ordinarily of short duration; the skin is dry—if moist, it is damp, unpleasant, and greasy—it is sometimes preternaturally cool; the countenance is livid and of a dusky hue, dark, and overcast as in scurvy; the eye is uncommonly clear and glossy, of a pearly white, and vacant expression; the thirst is irregular, seldom much increased; sighing and deep breathing are frequent; sense of stricture or inability of expanding the chest, without pain, is common; the general feelings are unsatisfactory, and pains of the loins and limbs are sometimes severe: soreness of the flesh is a frequent complaint; nausea is not unusual, and even vomiting sometimes takes place, but seldom in a material degree; the tongue is rarely such as is called foul, but it is often covered with rough saliva, and sometimes with a whitish paste; it is seldom dry; sometimes it is clean, smooth, and without the prominence of papillæ."

IV. The *fourth* form, which includes fevers of type.

" The cause of endemic fever, continued, remitting, or intermitting, is one; but great variety is produced in the form, and manner of action. The disease, in the more violent forms is, or appears to be, continued in some situations; in others it is remitting and of regular type. In wet weather, and on swampy grounds, the endemic of the country is usually remitting in form; and under this form exhibits appearances of jaundiced yellowness, of black vomiting, purgings of black matter, hæmorrhage from different parts of the body, petechiæ, lividness, &c. The tertian, or the compounds of the tertian, chiefly prevail; but, in several instances, a paroxysm seems to continue for forty-eight hours without remission; the third day is quiet, but  
fever

fever re-appears on the fourth, from which period the type is sometimes regular and distinct, with paroxysms on the alternate days—sometimes the powers of life are suffocated by the accession; hence the fourth, or the morning of the fifth, is often a fatal day in the fevers of strangers, whether continued or remitting. The symptoms of the paroxysms are of the same form and kind as where the form is continued, or without remission; they subside at a certain period, and at a certain period re-commence, going on for a limited space of time in this alternate action, and cessation from action. The circumstances connected with these alternate states of morbid action, and cessation from action, throw a great deal of light on the general operation of febrile causes.

“Corresponding with the first form of continued fever, the symptoms of the paroxysms of the remittent are violent, with great irritation, and strong action of the vascular system, an ardent pungent, and sometimes an excessively caustic heat, severe local pains, anxiety, restlessness, anguish at stomach, nausea, sickness, vomiting, hurried respiration, severe and distressing head-ach, pain of the eyes, delirium, &c. These sufferings abate at a certain period, but they do not often terminate by copious perspiration; they recur, subside, and recur again at intervals, till a critical period arrives—frequently the seventh day, when they cease finally, or signs appear of a fatal termination. During this course, symptoms often arise, similar to the symptoms of the concentrated continued fevers; the skin becomes dry, dingy, and withered, jaundiced yellowness makes its appearance in the eyes, black vomiting sometimes takes place, and in many instances hæmorrhage, or exudations of blood from different parts of the body—most frequent the tract of alimentary canal.

“A mode of action is also discovered under remitting form, in some manner corresponding with the second form of continued fever. The pulse is frequent, small and low, easily compressed; without energy and force; the skin cool, damp, and greasy, or dry, withered and dusky; the head-ach frequently severe, the countenance inanimate and depressed, restlessness is considerable, with anxiety at stomach and uncomfortable sensations; sometimes the alimentary canal is principally affected; there is thirst, a dry tongue, vomiting or purging returning at periods, but in no extraordinary degree of violence; upon the whole, the indispositions seem slight, the patient walks about, neither well, nor to common apprehension, materially ill. At a certain period, frequently on the fifth, sometimes on the seventh day, the nature of the action changes or becomes more intense in degree; the head is affected with coma, sometimes with a muttering delirium, the pulse becomes weak and sunk, the action of the fibre is impaired, in some manner suspended; a species of paralysis takes place, the heat sinks below natural. This mode of action continues twelve, sometimes twenty-four hours; the

powers gradually emerge, and are again oppressed by a similar suspension. Sometimes the animal heat is, in a manner, extinguished, the pulse totally suppressed; a mode of action which ceases and returns at intervals, and is known to be less fatal than threatening, by certain sensations of ease and quiet,—the serene and cheerful eye and countenance which accompany it.

“ The remitting also appears, in many instances, under a mode of action corresponding with the third form of continued fever. A livid dinginess overspreads the countenance from the commencement of the disease, a general torpor marks the existence of the paroxysm; the blood seems to stagnate in the extreme vessels, particularly under the nails, where a blackness, like a blemish, grows out in recovery; important organs, the lungs or brain, are often oppressed during this action of the febrile cause, and death is the consequence; when this is not the case, the powers of life emerge, till the renewal of the action produces a similar suspension, and frequently a fatal termination. This is the ordinary course in the more intense degrees, under the operation of powerful causes; in more common circumstances, the commencement is slight, the type is regular, and remissions, though not terminated by copious perspirations or other evacuations, upon the whole distinct: about the fifth or seventh day, a change of action takes place; the powers of life are in a manner suspended, or a great degree of torpor, in all the animal actions, supervenes; the circulation is heavy and oppressed, the countenance dusky and grim, dark, like mahogany, often greasy, damp, and dirty; general torpor and diminution of all the secretions mark the period of the paroxysm; these oppressions vanish, in some degree, after twelve or twenty-four hours, and again return at a given period.—Such a form of disease is frequent in the more unhealthy situations of St. Domingo, in the summer and autumnal months: it occurs occasionally in the more healthy, in the months of October and November.”

CHAP. VI. Contains some appearances observed on dissection.

In the next chapters, Dr. Jackson compares the characteristics of endemic and contagious fever, and lays down the prognosis in each; he makes a few observations on critical days and proximate causes.

CHAP. XI. *On the Cure of Fever.*

This part of the subject does not appear to be so much indebted to our Author as several of the preceding. A talent for observation and description, joined to suitable opportunities, may always improve the science of medicine, by furnishing the requisite data. Dr. Jackson has availed himself of these; but on the method of cure, he says, “ Medical science has in general advanced; some parts of it have made considerable progress, but the cure of fever appears to be stationary, if not retrograde. Books have been written upon the subject without number; infallible methods fill the pages  
of

of authors, and important discoveries are communicated in every new publication; yet, men die, as in the days of ignorance. The cure of fever, it must be acknowledged, is difficult, and capable of little perfection, in the state of progress at which the disease is usually submitted to the care of physicians. But though difficult, it might be presumed, that something could not well fail to be discovered, from the unwearied research of writers. The subject has filled volumes, yet it does not appear that a general principle is attained: the result, consequently, is a mass of contradictions—a collection of opinions, not always candidly and ingenuously represented. The author of this outline has felt the inconvenience, and now ventures to suggest some hints, which he hopes may in time lead to a remedy:—the laws of health are uniform and regular—even disease obeys a rule. If the precise form of diseased action could be ascertained, the method of cure might be laid down upon a sure foundation: this unfortunately is not the case; but even the knowledge of a principle, by which this action may be inverted, is of value. It implies, it must be confessed, an experiment apparently at random, but, under certain conditions, an experiment of safety.

“According to the manner in which the author has long viewed this subject, the plan of cure divides itself into two parts; viz. into the cure of a fever forming—and into the cure of a fever formed. In the first, art is capable of doing every thing; and it consequently ought not to leave any thing to nature:—in the second, a form of things has taken place, or a chain of operation is established, which can seldom be broken forcibly, consistent with safety to life; art can do little, and the little which can be done, requires caution and judgment; for, to act and not to do harm, under such a condition of things, is not ordinarily a matter of indifference.

“The cause of fever, whatever it may be, or whatever may be the direct mode of its operation, visibly and indisputably changes natural and healthy action, generally or locally, into action diseased and unnatural.—To invert this operation, to originate a new train of motions, analogous to those of health, is the fundamental principle of cure: and this much is certain, that if the object be undertaken at the proper period, the plan judiciously laid, and followed up with vigour, the end seldom fails of being attained. Decided practices, of whatever description, succeed; and the complete and perfect recovery of health is often the effect of directly opposite means; on the contrary, if the early period of disease be past, so that the organization of parts is injured, or deeply impressed with a figure of unnatural action, the conduct of the cure is a matter of great nicety, and requires great caution; the indications fluctuate and vary according to circumstances: symptoms, or modes of action, which threaten danger to life, will then be watched and warded off; but termination, or decided cure, must be left to  
the



the periods of change; for though crisis, by judicious exertions sometimes actually is, and often is capable of being rendered more complete than it otherwise would be, it is doubtful to what extent it can be accelerated.— These periods of change are important to the physician; and in fever, completely formed or advanced in course, must principally regulate his conduct.”

Dr. Jackson first treats of the cure of *contagious fever*; and in Sec. II. p. 263. of the cure of endemic fever. The principal novelty in the treatment of both, consists in attempts to cut short the progress of morbid action, or dis sever the half-formed morbid associations in the commencement of the disease.

This is attempted, according to the nature of the fever, and the state of the patient, by V.S. emetics, calomel, blisters, fomentations, and above all, by suddenly contrasting the hot and cold bath.

After the fever is completely formed, the cure recommended by Dr. Jackson does not materially differ from that of other authors.

The extracts we have given from the descriptive part, are doubtless sufficient to convey an idea of the originality, accuracy, and depth of research of our author: we trust they are sufficient to induce our readers to consult the work itself.

*A Comparative View of the Modern Medical Theories, &c.*

By N. P. GILBERT.

[Concluded from our last Number, p. 360—363.]

IN Germany, HAEN and STOLL shared the public opinion; both were incessantly employed in simplifying the materia medica, and both contributed to the banishment of that prodigious number of medicinal substances which had obtained so much credit in that country; but the authority of BOERHAAVE was still the only one that could be relied on with safety. It has been said, and with some truth, that one of the traits which chiefly distinguished that great man, was his having inspired those who adopted his doctrines with an enthusiastic veneration for his opinions.

In Great Britain, the genius of CULLEN long since prepared a revolution in medicine. At the instant his works appeared they attracted every mind by the eloquence, the method, and the force of reasoning of the author. For definitions always imperfect, he substituted descriptions, pictures which HIPPOCRATES himself would not have disowned, a nosological method, a model of precision and perspicuity, which deserved to be placed above that of the celebrated Sauvages, of which it is nevertheless only the counterpart;

part; but Cullen, that excellent practitioner, that accurate nosologist, could not guard himself from the mania of explaining the proximate causes of diseases. From this time he abandoned the path of observation, and wandered in his turn into the boundless field of ætiology. After having overturned the physical and chemical laws of Boerhaave, and the psychological laws of Stoll, he declared in favour of HOFFMAN; he placed his theory in a new light, or rather improved upon his ideas without introducing them into his work. In the mean time, his reputation was not confined to England, his works crossed the seas, and were received with enthusiasm in the most celebrated universities of Europe. In France, at this period, a medical system prevailed, without doubt the most perfect, as it admitted in the animal economy a principal preserver and restorer of the functions, to which all the spontaneous movements appear to be attached in the states of health and disease. This sublime idea of the *vis medicatrix* of nature, acknowledged by HIPPOCRATES, but which the sectaries had either overlooked and despised, and which was represented under distorted forms by the impetuous VAN HELMONT, afterwards reproduced by Stoll, under the idea of the intelligent principle, and revived by Cullen, under the title of reaction of the system, and at length reduced to its true state by the interesting labours of the French physicians, owed its reputation and glory to the powerful influence of philosophy, and the analysis of the sciences, literature, and the arts. Indeed, this doctrine was acquired by assiduous labour; in referring to the system of Hippocrates, it imposed the law never to swerve from the path adopted by that great man; but at the same time it fatigued the indolent and disgusted the superficial.

These difficulties procured the theory of Boerhaave a great number of profelytes. Such was the state of medicine in France when the revolution, that immense movement of persons and things, suddenly occupied the minds of men. At that time, a new medical theory was framed in France, which, about seven or eight years since, was introduced in England, where it obtained great credit: it was from thence transferred to Germany, where it apparently acquired the most brilliant reputation, and was finally received in Italy with an almost general enthusiasm. I allude to the Brunonian theory. It would be difficult to say upon what foundation it has been possible to present it as a new doctrine; for, in establishing excitability as a peculiar faculty for the exercise of the functions of the animal economy, BROWN has only united in his system, irritability and sensibility,—properties of the human being so admirably delineated by the illustrious HALLER, and the inestimable DE CREZE.

What have rendered this doctrine interesting are, the invaluable advantages which it holds out to man in a suffering state, in delivering him from every tedious

tedious and painful method of cure, in regulating, at all times, his sensitive powers and inclinations. This doctrine is likewise seducing, by the extreme simplicity which it pretends to have introduced into the curative art; since by it the whole of medical science is reduced to the following simple proposition:—Excitability is the property which characterises life. Excitement, or the action of the living powers, constitutes perfect health by consuming only a certain due portion of excitability. Too violent an excitement, by wasting too readily the excitability, generates inflammatory disorders and requires debilitating medicines. Too weak an excitement, by accumulating excitability, produces diseases of debility, and renders the use of exciting medicines necessary. In whatever state of the body, whether healthy or diseased, there always exists either too strong or too weak an excitement. Hence there can be only two species of diseases, two methods of treatment, two kinds of medicinal substances; such, in a few words, is the basis of the theory of Brown. But can we admit a doctrine which considers life as a forced state, which does not acknowledge the automatical action of nature in diseases? Can we admit the truth of a doctrine, which rests entirely on one single property of the living subject, and which depreciates all the dogmas it professes respecting the hypothetical establishment of a single principle?

It is too true, that the theory of Brown could not sustain the shock of a profound discussion, and that his most violent adversaries have started objections to him, which still remain unanswered. Nevertheless, if it lead to practical observations, if it approach to the true method of making medical observations, if it admit of being compared with these, the doctrine of Brown is only to be looked upon as a collection of propositions, applicable to practical medicine. How many important truths has it not restored to mankind, which would otherwise have been consigned to oblivion? What a subject for meditation is offered to clinical medicine, by this elegant distinction of weakness into absolute debility, feebleness of infancy, caused by a too faint stimulation of the accumulation of excitability; and by indirect weakness, or the exhaustion of the power of excitement, the melancholy and too common consequence of debauchery, and the abuse of the sensual passions? What lights will not clinical medicine receive from this division of diseases, from specific actions in which the whole affected system calls for general remedies, and in local internal maladies; of various systems which only present special indications to be answered. If the dangers of repeated purgatives in intermittent fevers, if the necessity of a stimulating medicine, in most chronic diseases, be at this time incontestable points of doctrine, it is perhaps to the theory of Brown, that we are indebted for these fortunate changes in the practice of physic. Hence it is true, that this theory, which by the vague generalities which it proposes for practice, by the introduction of whimsical ideas, by the  
obscure,

obscure, and often enigmatical language, which it gives rise to; did not appear worthy a place among the systems of medicine, which perhaps will again be consulted with pleasure, with interest, and with utility by philosophic physicians; and may yet afford them great assistance in the curative art.

The application of modern chemistry, to pathology and therapeutics, or rather that part of the system of the science of man, which is connected with chemistry, in the different states of health and sickness, is what remains for me to examine. The author of this new theory, is a much-respected physician, whose labours have considerably enriched medical literature, and thrown much light on the practice of physic. The following are a few of its principles.

The various actions of life present, in organized bodies, an uninterrupted succession of fluids throughout them of fluids in solid bodies; now these changes cannot operate on the substances, which enter into the composition of the living subject, without altering the constituent state of the elementary materials of all those substances. Hence it appears, that oxygen, hydrogen, carbon, phosphorous, sulphur, azote, and lime, are thrown out every instant by health and disease, and form new combinations, which may tend to determine the principal cause or nature of pathological affections. Thus, the inflammatory diseases of Stoll, or, which is the same thing, the sthenic disorders of Brown, are, in the theory of GIRTANNER, of ROLLA, and of BAUMES, only a perfect superoxygenation of the living system, a quick combustion, accompanied by its sensible phenomena, the discharge of caloric, the production of a very intense animal heat, and an increased energy of the vascular arterial system. The author supports his doctrine on several positive experiments made by BERTHOLET, FOURCROY, CHAPTAL, PARMENTIER, DEYBUX, and VAUQUELIN, to whose labours true chemistry is under such great obligations. Hence scorbutic disorders, which, according to the doctrine of Stoll, only introduced the septic change of the animal fluids, but according to Brown, which are only the produce of the last stage of direct asthenia, are, in the language of modern chemistry, a greater or less disoxygenation of the albuminous juices.

If the portion of oxygen necessary to the maintenance of life, decrease; if this principle of irritability is weakened, being subject to new combinations in the elementary materials of the living body, it causes a superabundance of hydrogen and carbon.

The elements of bile then predominate in the blood; bilious fevers are the consequence, always accompanied by that kind of acrid heat, which discloses the presence of carbonated hydrogen. Such is the new theory of putrid diseases.

In several other pathological states, phosphorization has a powerful in-

fluence. This agent is known to be the generative cause of several diseases of the bones, as rheumatic and arthritic affections, the ætiology of which has hitherto remained undiscovered. The therapeutic art has also been submitted to this chemical theory; we need only acknowledge in medical substances the superoxygenates, the difoxygenates, the hydrogenates, the azotes, the phosphorates, &c. &c. &c.

However ingenious this theory may seem, it has this great defect, that any direct comparative experiment made on the living subject in a state of health or disease, will not conduce to its establishment; besides, it reproduces, in an indeterminate degree, the system of humoral pathology of which philosophic physicians had wisely circumscribed the bounds; the explanation of phenomena does not devolve on any fact incontestably established; but that which will probably prevent the admission of it by physicians, is, that it deprives the animal economy of its greatest and most distinctive character, *VITALITY*, that principal preserver and renovator of beings, that wonderful quality which sustains them against physical power which continually tends to their decomposition, which acts independent of mechanical, physical, or chemical laws, and which leaves no other traces of its presence in the body than what is exposed by the motion of life. It is true then, that an ætiology, that a chemical nosology, with difficulty explain the state of the animal economy, in the various affections which can produce any change in the soundness of its functions; yet, if we draw this medical theory from observations; if we are contented with regarding it as a combination of experiments, of analogies, and of analyses, from which the curative art might reap advantages, how many ingenious essays, brilliant discoveries, happy resources, views really useful, salutary medicinal preparations, advantageous modes of healing, have not the labours, the genius, and the application of so many celebrated chemists produced in the course of a few years? of the birth of whom, France, England, Germany, and Italy, claim the honour.

The analytical details into which I have just entered relative to the actual medical theories, clearly prove,

That every medical theory which is founded on an hypothesis, ought to be banished from amongst the number of useful discoveries in medicine.

That the greatest misfortune which can happen to a patient, is to fall into the hands of a physician bigotted to a particular system, however ingenious he may be, or whatever conformity there may apparently be between the facts and the explanation which he gives of them.

That it is not medical theory which can furnish to the philosophic physician, any subject for useful observations.

That the character of a real physician is, not to attach himself exclusively

to any particular theory, but to investigate all, and to collect such advantages as they may offer, by comparing them with medicine of observation; that it is this which may be called medical electrism.

This great art of extracting, from all the modern systems, a medical doctrine, which might contain nothing but what any one of them may declare to be useful, would at the present time demand the re-union of the greatest talents. The character of a consummate physician, an indefatigable chemist, a philosophic observer, an exact anatomist, a practitioner of great experience, an erudite author, an eloquent writer, a profound thinker, all ought to be concentered in him. Such was Boerhaave, when he laid the foundation of his Medical Institutes, and immortal Aphorisms; a work in which ability is united to method, and the art of writing added to conceptions of the most extensive genius. If the discoveries of subsequent times have brought back every mind to the doctrine of Hippocrates, to medicine of observation, Boerhaave has not the less preserved all his rights to the veneration and esteem, even of those who have substituted in lieu of his theory, a philosophic doctrine more worthy of the present age.

Hence it becomes the duty of every medical student, to reconcile by his essays and by his exertions, according to his wishes, the time when simplified medicine may be reduced to an elementary, concise, and rational method, proper to direct instruction and enlighten practice. It is the duty of medical societies, eager to concur in this great undertaking, to encourage every work, however imperfect it may be; because, they tend to re-animate emulation, to excite zeal, to light the torch of genius, and thus become the auspicious commencement of a complete production. Such are the motives which have induced me to trace this faint sketch, in which I have endeavoured to do justice to the Medical Society.

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*The press of new matter, in our last Number, prevented us from continuing the analysis of Mr. JAMES PARKINSON's useful work, entitled, "Medical Admonitions," of which we gave a short account in our third Number, p. 310; and which, according to our promise, we now resume.*

THE author treats of all the diseases and accidents common in this country, in a concise and perspicuous manner; adding such advice and cautions as are best calculated to answer the intentions expressed in the title-page.—As specimens, we select the following passages.

*The malignant ulcerated sore throat, p. 116.*

"As the fever increases, grey or ash-coloured spots appear on the uvula, tonsils, &c. these extend themselves, in proportion to the violence of the disease; frequently spreading and running one into the other, with the utmost rapidity, the debility becoming excessive, and a continual discharge of a thin acrid humour, taking place from the nose and mouth, corroding both

both the lips and nostrils. As the disease proceeds the greyish crusts are discovered to be deep gangrenous sloughs; the breath becomes exceedingly offensive, and the disease soon increases to such a degree, unless happily opposed by successful means, as to carry off the patient, sometimes, within the third day after the attack.

From this slight sketch, the domestic practitioner must be apprised of the malignity of this disease, and the rapidity of its progress; and he may also be assured, that he will not always be able to distinguish it, at its first attack, even from the inflammatory sore throat. A mistake here would not only occasion an omission of the proper remedies, but the employment of such means as must necessarily very much expedite a fatal termination."

*The croup, or inflammation of the wind-pipe, p. 122.*

"The exquisite degree of danger which always accompanies this disease; the rapidity with which its symptoms proceed, and the probability of its escaping a sufficiently early detection, will induce me to be rather diffuse in its description; hoping, that parents may thereby be enabled to discover it immediately on its appearance, and be induced to apply for medical aid in the first moments of the disease."

Then follows a very correct enumeration of the symptoms of croup, particularly those which occur at its commencement; to which we refer our readers.

*Hydrocephalus, or watery head, p. 440.*

"No one, surely, can hesitate for a moment, in believing that the treatment of this melancholy disease ought only to be confined to the most judicious and experienced. I shall, therefore, only mark out those symptoms which ought to arouse the attention of the parent, and occasion him immediately to call in the most powerful aid; and point out some circumstances by an attention to which, this malady may; perhaps, be sometimes prevented.

"This disease generally occurs within the first ten years of life; sometimes the complaint comes on suddenly, but in general it commences with a slow fever; and is indeed accompanied, in its beginning, by such symptoms as to render it very likely to be mistaken for an attack of the slow nervous fever. Soon, however, the disease is rendered more manifest, by a disinclination to employ the muscles on which voluntary motion depends.

"The arms and legs are moved with reluctance, and the fatigue of preserving the body in an erect posture is such, that the patient is always desirous of being laid down; the pain in the head is more constant than in the low nervous fever; and the heaviness and dullness more evident: the pulse is also usually very slow and irregular. As the disease proceeds, the pulse becomes quicker: the child's senses and faculties become evidently impaired, the sight particularly fails him, objects appearing exceedingly indistinct, and the pupils of the eyes are constantly dilated. Towards the close of this melancholy scene, the urine and stools are passed involuntarily; total blindness comes on, and a fatal termination takes place, while the patient lies in a somatose state, or whilst agitated with severe convulsions.

"I here conclude the task allotted me, hoping that, notwithstanding its imperfections, this little work may prove of real utility. Your candour will, I trust, prevent you from inferring, from my philippics against domestic quackery, that it is my wish to lessen the diffusion of useful knowledge. Indeed, on the contrary, I am confident that the best and most effectual mode of checking the career of empiricism would be, by more frequently admitting

admitting the study of anatomy, physiology, pathology, and chemistry as part of a liberal education." p. 497.

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*A concise Analysis of Professors HUFELAND and KANT's Treatise on the Art of prolonging Life.*

[Concluded from our third Number, p. 259—263.]

**A**DVANCED age, though it be the natural result of life, and the first step towards death, may nevertheless of itself become the means of prolonging life. It is true, it does not increase the principle of vital spirits, but it retards their consumption; and it must be allowed, that man would sooner terminate the last period of his life, at the time when he suffers a diminution of his natural powers, if he did not, at the same time, grow old. It now remains to explain this assertion, which is apparently paradoxical.

In the decline of life, man is least provided with vital spirits, and with the faculty of restoring those which he daily loses; if, in the mean time, he continue to live in the same active state, and possess the same vivacity as formerly, the spirits will be the more readily exhausted, and he will the sooner terminate his life; but the character of the present age diminishes the effect of natural irritation, and of the sensitive faculty. Interior as well as exterior objects, do not strike him so forcibly; consequently, he exhausts a less quantity of power and energy, and therefore advances still farther with that portion of power which remains; and if he lives temperately, his life will be prolonged. It is to this reduced degree of irritation, that the present age owes the faint effects of dangerous impressions, and the causes of disease; such as passions, violent exertions, &c. It maintains a greater degree of harmony and calmness in the interior economy, and by that means fortifies the body against various accidents. On this account also it is remarked, that old men are less subject to epidemic attacks than young persons. To this may be added the manner of living, which incontestibly contributes, in a great degree, to the prolongation of life. The operations of the animal economy, which have continued during so long a time, in the same order and manner, become at length so habitual, that they are carried on, as it were, by habit alone, when other causes cease to exert their influence. It is often astonishing, to see how individuals of a very advanced age, continue to support themselves during a certain period, in such a manner, that the whole system is supported in a progressive regular order. When the moral powers of man are almost completely annihilated, his physical faculties continue to vegetate some time longer; the latter of which, doubtless, require less of vital supply than if he existed in an integral state. It is also this state of life which makes a man wish to live longer as he increases in age. We may venture to add, that this desire becoming every day more ardent, and consequently cherishing hope, supplies, perhaps, still more the loss of vital spirits, which, as HUFELAND has somewhere remarked, increase with hope.

The system of regimen to be followed is, to diminish excitation, and to soften the stiffness of the fibres, the contractility of which is liable to be totally suspended. It is necessary to facilitate the restoration of losses and digestion as much as possible. A greater degree of irritation should be given to the body, since the natural irritability is considerably diminished. The secretion of the putrid miasmata ought to be promoted, which in old age is so imperfectly formed, and which attracts that impurity of humours that



that contribute to a speedy dissolution. From these principles are derived the following rules :

1. In old age the natural heat fails ; it is consequently necessary to support it as much as possible, by means of external objects, warm clothes, warm apartments, warm beds, nourishing food, and also, if possible, a temperate climate.

2. The food ought to be such as is easy of digestion, rather liquid than solid, of a concentrated substance, and more stimulating than was formerly conducive to the welfare of the individual. Hence jelly broths, seasoned with spices, are of great benefit to old persons : give them roast meat, well done, beans, peas, and other nourishing pulse, strong beer, and above all, plenty of good old wine, which does not contain acid, earthly particles, or viscidities, such as old Spanish wine, Tokay, Cyprus, and Cape wine. Such wines are to them one of the greatest resources of life ; they do not over-heat, but nourish and strengthen the aged ; in fact they are the balm, the real milk of old age.

3. Tepid baths are of great utility : they are among the best means of augmenting the natural heat, of promoting the secretions, particularly cutaneous perspiration, and of ultimately diminishing the exsiccation and rigidity of the fibres and membranes. They answer almost all the necessities of this period of life.

4. All violent evacuations should be carefully avoided, as venesection, (unless in particular urgent cases) violent purgatives, as well as sensible perspiration, the sexual intercourse, &c.

5. As soon as a person attains an advanced age, he ought to accustom himself in a great degree to arrange all his functions of life, according to a certain order ; he ought to rest, take exercise, eat, and drink at regular periods. This order, this mechanical habit of living, contributes in a remarkable degree to prolong life.

6. The body requires exercise, but great care should be taken, not to make use of any that may effect or exhaust it ; a passive species of exercise should be preferred, such as riding in carriages, repeated friction with odoriferous and tonic ointments, which diminish the stiffness of the fibres and keep the skin in a healthy state. But above all things, care should be taken to avoid sudden alarms or shocks ; such are commonly the forerunners of death.

7. A cheerful temper, and agreeable amusements, produce a wonderful effect on the human body, provided they do not partake of the stronger passions, which, in an advanced age, may produce effects instantly fatal. What are most beneficial, are, liveliness and contentment, the effects of domestic happiness, which are enjoyed by reflecting on the past ; by perceiving that we have not lived in vain, and even looking towards death with satisfaction.

The foolish games of childhood, and the society of children, are most agreeable to old people. Their infantine questions, their innocent joy, seem to have a renovating effect upon age. Hope and future prospects are expedients particularly useful ; new plans, fresh undertakings (provided they contain nothing dangerous or embarrassing,) in short, every thing which tends to encrease the expectation of a still farther prolongation of life, all contribute to extend its physical limits. We find also, that in old persons, this is an instinctive idea ; they begin to build, to arrange their gardens, and appear to take a singular delight in this faint illusion, from which it may be inferred they wish to insure their lives.

*On the Practical Study of Botany, by Means of Chemical Analysis:  
—Chiefly abridged from the Original Papers of Dr. T. S.  
HERBSTAEDT, &c.*

[Concluded from our last Number, p. 377 to 381.]

*On the Proportion of Watery Parts in Vegetable Substances*

**I**N the chemical analysis of vegetable bodies, we ought previously to attend to the circumstance of their being completely freed from all humidity. To ascertain this, let us weigh a determinate quantity, for instance, one hundred arbitrary parts of the substance under inquiry, whether this be an herb, a root, bark, flower, or wood.

The question here is, of such vegetables as have been previously dried in the air, and deprived of the greatest portion of their humidity. If the experiment is to be made with green vegetables, we may choose the recently expressed juices for the analysis; but in this case likewise, an accurate knowledge of the quantity of water it contains will be indispensably necessary. Hence it will be proper to dry a certain quantity of the fresh herbs, ascertained by weight, in order to learn how much they have lost of their aqueous parts. By this comparative estimate we shall be enabled to determine, with tolerable precision, the relative proportion between vegetables in a fresh and a dry state.

After these arrangements, a small portion of the vegetable substance is put into a well-coated retort, with a similar receiver, and the whole is submitted for two hours, to what is called the water-bath. Although an experienced operator may employ the sand-bath with equal advantage, by a very careful management of the fire, and the use of a good thermometer, by which he can manage the degree of heat, so as not to exceed the boiling point; yet the former process is incomparably safer, inasmuch as it will effectually prevent too high a degree of temperature, as well as the decomposition of the vegetable matter under examination.

Having attended to these particulars during the operation, there will be usually found in the receiver a small quantity of a liquid, which, if the distilled substance was of an odoriferous nature, will be generally mixed with some essential oil. Meanwhile, we shall find in the retort the residuum of the distilled substance, in a state of absolute dryness, in which all other constituent parts remain unchanged, but deprived of their liquid. If both the receiver and the retort have been properly coated previous to the operation, the quantity of the liquid passed over in distillation will be evident from the increase of weight.

After removing the dry residuum, it sometimes happens that the retort also has gained an accession of weight, which is generally owing to some particles of ethereal oil having remained attached to its sides.

If the substance thus distilled was destitute of odour, the liquor obtained from it may be considered in the analysis as pure water. But if the substance contained an essential oil, or was combined with other volatile and fragrant particles, then the water in the receiver is either impregnated with odour, or the essential oil itself swims on the top. In the former case, the volatile and fragrant matter consists either of pungent (acid) or narcotic parts, which deserve farther investigation. In the latter case, the oily parts may be separated by means of cotton, and their weight deducted from that of the whole fluid mass. It deserves, however, to be remarked, that a small quantity, perhaps the 80th, or only the 100th part of the oil remains dissolved in the fluid residuum.

*On the separation of oleaginous matter, or ethereal oil, from vegetables.*

If a vegetable substance, after previous examination, is supposed to contain any considerable quantity of essential oil, the following process may be adopted for ascertaining it by experiment. In the first place, we must procure several quarts of a strong distilled water, from the same substance: Another quantity of that substance, not less than one pound weight, must be cut in small pieces, and put into a retort with six times its weight of the distilled water. Two thirds of this fluid are now to be drawn off by distillation, which is most advantageously performed in the sand-bath. The oily parts thus separated will be found in the fluid passed over into the receiver; and, as the water here employed was previously impregnated with as great a portion of ethereal oil as it was capable of holding in solution, the quantity of the oil obtained by this process, may be considered as the true proportion existing in a given weight of the plant.

These oleaginous particles frequently appear under different forms: they commonly either swim on the water, or sink to the bottom, on account of their greater specific gravity, which is particularly the case with the aromatic productions of hot climates; or, lastly, they appear so intimately blended with the water, that it assumes an opaque, milky appearance. In the last case, the produce of distillation ought to be kept quietly, in a close glass vessel, for several days or even weeks: during which time the liquor generally becomes transparent, and the oily parts will be found adhering to the sides, or bottom of the vessel. Such oil, being in a manner crystallized, may be easily melted by heat, and poured out of the vessel.

*On the method of obtaining camphor.*

Some vegetable substances, besides the essential oil, contain likewise a portion of camphor, as one of their primary constituent parts. This ingredient may sometimes be discovered by the smell, and the cooling, pungent taste of such substances; for instance, in the peppermint, cardamoms, &c. Such being the case, we may justly conjecture, that some camphor will be disengaged by distillation, either in its pure state, or in combination with essential oil. From this it may again be separated, but not without a small loss of both, in the manner following: Dissolve the whole of the camphorated oil, thus obtained, in a proportionate quantity of alcohol; which is capable of combining with the camphor as well as the essential oil. Dilute this solution with twelve parts of distilled water: if the oil contained no camphor, the water used for the mixture will remain clear and transparent; the alcohol will gradually combine with it, and the oily particles separate. If, on the contrary, the oil was mixed with camphor, the whole of that fluid on mixing it with water, will be converted into milky liquor, from which the camphor will gradually be precipitated in the form of a white powder, while the oleaginous parts ascend to the surface of the water. By melting this powder in a close glass vessel, over a gentle fire, it will acquire the concrete form of camphor. The remaining liquor, however, will always retain some small portion of the oil as well as the camphor.

*On the process for separating gum.*

As vegetable substances seldom, if ever, contain gum in a pure state (for this is almost uniformly mixed with the mucilage, soap, and resin), it will be necessary, in the analysis we undertake, to pay proper attention to these circumstances.

Having previously ascertained the existence of gum in a vegetable body, we may proceed to analyse it in the following manner:

1. A determinate small quantity of the substance under experiment, according to weight, should be placed in a glass vessel, provided with a neck and receiver: four or six times the same quantity of the strongest alcohol, by weight, must be added to the vegetable; and the whole kept for eight hours in tolerably strong digestion.

2. After this, the liquor, as well as the whole of the macerated substance, must be strained through a linen cloth. The residuum must then be again digested, for the same length of time, and with a similar proportion of alcohol; after which, the extract is to be treated in the same manner as before.

3. As we may now be assured, that all resinous and saponaceous matter, if such existed in the substance, have been dissolved in the alcohol, we shall find in the extracted residuum only the fibrous or woody parts, with the gum, and not unfrequently some mucilage.

4. In order to separate those parts; distilled water is to be poured on the residuum, and strongly boiled with it in a tin kettle. The fluid part is afterwards poured off, fresh water is added, and the decoctions are repeated, until the water manifest neither taste nor colour, and the remaining vegetable fibre be likewise deprived of all sapidity.

5. This operation being finished, the remaining vegetable fibre is pressed through a small linen bag, which ought to be previously weighed; and after the bag and its contents have been completely dried, we shall find, from its subsequent weight, nearly the exact quantity of all soluble constituent parts which have been extracted during the operation.

6. The whole of the watery decoction thus obtained, after being properly filtered, should be strongly concentrated by slow evaporation, and afterwards suffered to stand quietly in a glass vessel, slightly covered. If, during this time, some pulverulent matter shall fall to the bottom, it usually consists of resinous particles, and ought to be preserved, together with the spirituous extract.

7. If, on the contrary, after several days, the liquor should still appear transparent, it then ought to be evaporated to complete dryness, in a glass vessel (previously weighed) over a very gentle fire: in this case, the increase of weight in the vessel will point out the quantity of the substance obtained.

8. If the extract was pure gum, the whole will be transparent, vitreous, and of an uneven fracture; but if it, at the same time, was mixed with mucilaginous matter, the inspissated mass will present a horny and semi-pellucid appearance, and have a granulated fracture.

#### *On the Separation of Resinous Matter.*

If a plant submitted to analization contained *gum*, it will be found either in a separate state, or combined with saponaceous matter. In order to separate these two constituents of vegetable bodies from each other, they must be treated throughout as has been stated in the preceding section, relative to the separation of gum; by which means we may obtain the resin and soap, in a combined state, dissolved in the alcohol.—In order to separate them effectually from each other, we proceed in the following manner:

1. The spirituous extract is poured into a retort, with the addition of the fourth part of distilled water: this mixture is submitted to distillation, as long as a drop of spirituous liquor passes over into the receiver.

2. After this distillation is finished, we shall find in the residuum resinous matter, mixed, perhaps, with some remaining saponaceous particles.

3. The whole must now be evaporated, by a very moderate heat (in a glass vessel, previously weighed) until it be perfectly dry. From the difference of weight we shall find the absolute quantity of resinous and saponaceous matter.

4. In order to separate these two substances from each other, the whole should be mixed with four times its weight of vitriolic ether; the retort must be provided with a proper neck and receiver, and the mixture suffered to digest. If a complete solution be the result, we may conclude that it consisted of pure resin; as, in the contrary case, the resinous matter was mixed with that of soap.

5. After the first extraction has been performed, the coloured liquor should be poured off, and the residuum again digested in a new supply of vitriolic ether; an operation which ought to be repeated, until the ether newly employed retains its natural colour.

6. If these directions be strictly followed, the matter of resin will be completely dissolved by the ether, and cleared of the saponaceous particles.— Now the different extracts made with ether should be poured into a tubulated retort, provided with a receiver, (the weight of which has been previously marked) and distilled over to dryness; thus the ether will be obtained in the receiver, and may serve for further experiments. After the retort has become perfectly dry, its increase of weight will shew the exact quantity of resin gained in the process.

#### *On the Separation of Saponaceous Matter.*

1. The experienced operator on vegetable substances cannot fail to have observed, that the matter of soap always forms in them one of the principal constituents, serving as a vehicle and mean of combination for many other substances which cannot be separately exhibited. The saponaceous ingredient; therefore, requires a principal share of attention in the analysis of vegetable bodies; for much depends on its accurate separation, if we wish to ascertain the constituent parts of vegetables with a due degree of precision.

To obtain the matter of soap in a separate state, the process to be pursued is exactly similar to that already pointed out for the separation of resin; for in the present case, the former substance spontaneously remains behind, if the mixture, consisting of saponaceous and resinous matter, has been previously cleared of the resinous particles, according to the method already described. It only requires to be once more dissolved in water, filtered, and the liquor evaporated to dryness, in order to learn the absolute quantity of saponaceous matter; and to be convinced that it contains no admixture of either gummy or mucilaginous particles.

#### *On the Separation of Saccharine Matter.*

If vegetable substances be remarkable for their sweet taste, we may without hesitation infer, that they contain the saccharine principle; but, as this is very frequently blended with gummy, mucilaginous and particularly with saponaceous matter, it ever remains a subject of considerable difficulty to exhibit the sugar in a pure and perfect state. Where this valuable substance is contained in abundance, the operation proves sometimes successful, by extracting such bodies with alcohol, filtering this extract while hot, and afterwards allowing it to grow cold in a quiet place. By this mode of proceeding, real sugar has frequently been found precipitated in grains.

So far Dr. Hermbstaedt's papers, of which we are in possession at present. As we are in daily expectation of receiving some further accounts from this valuable practical chemist; and as Mr. ACHARD, of Berlin, has lately made very successful experiments with the beet root, or the famous *mangelwurzel*, from which he affirms that he has obtained sugar of a pure kind, in the proportion of about one pound to fourteen of the fresh root, and this by an easy and cheap process, we hope to be soon enabled to lay before our readers, the authentic particulars of these new and highly interesting discoveries.

#### HINTS

## HINTS AND IMPROVEMENTS

IN THE PRACTICE OF

## MÉDICINE AND SURGERY.

*On the Treatment of Biliary Calculi, Stone and Gravel.*

IN our last Number, p. 394, we gave a short account of the successful treatment of biliary calculi, by the internal use of vitriolic ether and spirit of turpentine. We also mentioned that M. DURANDE, a French physician of Dijon, had first prescribed this powerful remedy. In justice to our countryman, C. White, of York, we state that he originally discovered this remedy, in consequence of the experiments he made, by dissolving biliary calculi in a mixture, consisting of alcohol and turpentine.

M. Durande, however, has the merit of having first employed vitriolic ether in preference to alcohol, with almost uniform success, and of having furnished us with a more detailed account of the remedy.

There is scarcely a disease, with the cause and origin of which we are so imperfectly acquainted, as that of biliary and urinary concretions; and, as all the remedies hitherto employed have arisen from hypothetical indications, we need not be surprised at the want of success in the treatment of this painful and formidable disorder. Although it be certain, that the formation of concrete matter in the kidneys requires a particular disposition of the body, without which it will not take place, yet it is equally certain, that occasional causes co-operate, such as the use of hard and indigestible food, a sedentary life, excess in wines containing much acid, and particularly the want of diluent watery drink. If a person is once afflicted with renal calculi, urinary concretions will soon follow, if the smallest particles of the former descend through the ureters into the bladder; and there increase in size by combining with the sediment precipitated from the urine; unless they be speedily washed away by that fluid. And as every individual may observe a greater or less quantity of this precipitate in his urine, it is evident that urinary concretions may arise without any predisposition to biliary calculi, if foreign bodies get into the bladder, and remain there long enough to combine with the urinary precipitate.

The ætiology in these cases being so obscure, that the practitioner is frequently led, not unlike the lame man, by the blind, in the dark, Dr. WILlich was induced to prescribe M. Durande's composition, in a recent case of a patient, who, for six years, had been afflicted with spasmodic strictures of the urethra, and extreme difficulty of voiding urine, accompanied with excruciating pain in the region of the kidneys, and frequently extending to the lower vertebra, and the whole abdomen. The patient being of the advanced age of eighty, yet of a robust constitution, having led a sea-faring life, and being accustomed to strong food and the use of spirituous liquors, the pre-disposing causes to gravel were manifest; while the character of the disease was established by the discharge of gravelly urine, mingled with blood and mucus.

As he had passed no urine for several days, and could not be prevailed upon to apply the catheter, or at least try the use of bougies, Dr. Willich prescribed as follows: *Rj. Æther. vitr. dracm. iij. Spir. terebinth. puri*

3 M 2

drachm

drachm ij. M.—Of this mixture, after gently shaking it every time previous to its use, ten drops were at first directed to be taken every hour; these were gradually increased to twenty drops: next day the patient was directed to take twenty-five drops every two hours, in cold water sweetened with honey; and, after continuing this medicine for three days, observing a proper diet and regimen, keeping the body open by the plentiful use of prunes, apples, &c. and fomenting the abdomen with an infusion of chamomile flowers, with the addition of one ounce of landanum to every quart of the infusion, the patient was only relieved from pain, but on the third night (after having taken 35 drops of laudanum to allay the spasmodic tendency of the system, and procure sleep) he involuntarily discharged such a quantity of urine as must, according to the account given by his nurse, have amounted to several gallons. However this may be, it is indisputable that the relief in this case was principally owing to the *gradual* action of the compound.

The efficacy of this remedy has lately been sufficiently confirmed by the respectable authorities of Dr. Starck and Professor Sommering, of Mayence, who have observed its salutary effects in a variety of cases, in which this composition, after it had been used for a few days only, relieved the most distressing symptoms, and caused the patients to discharge urinary calculi in small pieces.

#### *On the poisonous Effects of Mineral Acids.*

In the '*Recueil Periodique*' No. xxxi. published by the Medical Society of Paris, we meet with an interesting article, communicated J. B. DESGRANGES, physician at Morges, in Switzerland. The author states the case of a soldier, who, by mistaking it for brandy, had swallowed a glass-full of the sulphuric acid; and, in consequence of its violent action, was carried to the hospital, where the author found him in the agonies of death. He instantly prescribed the following antidote, the good effects of which he had frequently witnessed: viz. a drachm and a half of the carbonate of magnesia (magnesia usta aërata) dissolved in a tea cup-full of pure water. This dose produced excessive vomiting; and, after repeating the magnesia in the quantity of half a drachm, every half hour, for about half a dozen times, and giving at intervals the solution of gum arabic with sugar, the patient was completely recovered.

Desgranges mentions, among other cases, that of an artist, 36 years of age, who, in the moment of despair, swallowed more than half a wine-glass-full of nitrous acid; he immediately felt a violent heat and irritation, extending from the throat to the stomach. When the author arrived, (the time not being specified) his patient was seized with convulsive vomiting, and other symptoms, similar to those of the soldier mentioned in the preceding case: he instantly prescribed a drachm of pure magnesia, with some sugar dissolved in water, and soon after it half a drachm, which stopped the vomiting. He then directed a scruple to be taken every half hour, which, in less than three hours, relieved the patient from pain; on the following day, there was a considerable swelling and tension in the inner part of the throat, difficulty of breathing, painful deglutition, and gangrenous spots appeared about the mouth. The author, on this occasion, observes, that this was a real gangrenous quinsey, but produced by a cause merely accidental, or factitious. He consequently bled the patient twice within less than twelve hours, one of which bleedings was performed on the foot. At length, after the applicati

of mild purgative clysters, and diaphoretics, to abate the miliary eruption on the skin, which was accompanied with intolerable itching, and which took place about the sixth day after the accident, the patient was effectually cured.

The author's fifth observation relates to a singular case of a young woman, who had been imprudent enough to rub her hair with a pomatum, of which arsenic formed an ingredient, with a view to destroy vermin. Six days after using this pomatum, the whole head of the patient became swelled, and she suffered the most excruciating pains over the whole body. Desgranges was consulted; he bled her freely, especially on the foot; directed chicken-broth for her drink, with a small portion of nitre; frequent washings with a decoction of linseed; mercurial honey; cordials; warm bathing of the lower extremities, &c. &c. Besides these remedies he caused her head to be rubbed with *Baume's pomatum*, made of a cream and a fourth part of the powder of white chalk. He next applied from eight to ten leeches, to the thighs, which produced an uneasy night; the swelling of the head appeared to have increased; and in the morning the whole body was covered with a considerable eruption of small spots, with white points resembling millet, extending even to the hands and feet. In this extremity the author again had recourse to his favourite remedy, and ordered his patient repeated doses of calcined magnesia, with the syrup of marsh-mallows, "which obviously increased the evacuations of the primæ viæ." In short, the eruption subsided, and all the alarming symptoms abated in forty-eight hours, so that the patient was declared out of danger in eight days.

M. Desgranges accompanies these cases with some desultory remarks on the imminent danger attending the external application of arsenic: and he observes one of its constant effects is, that the bodies of those who use it, are uniformly covered with blotches.—As to his liberal administration of the magnesia, we have no other objection than what has been already pointed out by the editor of the '*Recueil Periodique*,' that magnesia may not always be convenient; and that, delay in these cases being attended with danger, there is a remedy more simple and equally effectual, one of which will be found in or near every cottage as well as in the palaces of the great—that is, *simple water taken in sufficient quantity*, which will not only dilute the most virulent poison, and reduce its acrimony so far as to blunt the sharp points, for instance of arsenic,—but it will likewise inundate the stomach as well as the intestines, and operate either upwards, as an emetic, or as cathartic, carrying the deleterious matter, through the intestine canal, without much injury to the coats of the stomach and bowels.

#### *On the Treatment of Gangrene and Sphacelus.*

In a late treatise, published by C. WHITE, of York, containing remarks on sphacelus, particularly that species which is accompanied with convulsive symptoms, and has arisen from local external injury, we meet with a new method of cure proposed for that complaint. It consists of a combination of musk with *sal cornu cervi volatilis*, in equal proportions. The patient begins by taking 10 grains of each, or 20 grains of the compound, and increases this dose gradually to 80 or 100 grains, and upwards, of each. The effects of this medicine are stated to be such as deserve the greatest attention of practitioners, but we do not find that it has been generally employed, unless by foreign practitioners, who speak of it in the highest terms of commendation.

Another remedy of uncommon efficacy in gangrene and malignant inveterate ulcers, stands recorded on the authority of Dr. COLLIN, of Vienna, who affirms that he found it equally successful in both humid and dry species



of sphacelus. In the former, he directed the sphacelated part to be covered with the powder of camphor, pretty thick; and in the latter case, to apply a strongly camphorated liniment. See *Gesenius Handbuch der praktischen Arzneimittellehre*. Edit. 2. p. 328.

The superior efficacy of this remedy is further attested by the celebrated veteran, C. C. Hoffman, of Mayence, who has frequently prescribed it with singular success in the confluent small-pox, when little hope remained of the recovery of the patient: and in the case of a German lady of high rank, after the cadaverous fetor had driven all her relation from the palace, he within twelve days used no less than *eighty ounces of camphor*, partly by giving a scruple every half hour internally, and partly by keeping the patient continually covered with camphorated liniment. C. Monch, another German physician, in a similar manner, employed not less than *ten pounds and five ounces of camphor*, within twenty-two days, in the case of a young woman, twenty-two years of age, labouring under a confluent though benign species of small-pox, without giving such large doses internally as in the preceding case treated by Dr. Hoffman; but Monch's patient died, notwithstanding that prodigious quantity of camphor had been used, and the whole body was covered with a dark brown crust. *Ibid*, p. 326.

In our second Number we gave a short account of various new methods devised for treating inveterate ulcers, in which we particularly mentioned (p. 188.) the excellent antiseptic qualities of the *Augustura bark*. Dr. Willich has since prescribed it, in two cases, with obvious good effect. One of his patients was a lady, in the primary stage of phthisis pulmonalis, who had been troubled for several months, with an ulcer on each of the heels, immediately below the ankle, the consequence of mismanaged chilblains, both being extremely painful, of a livid hue, and sphacelous appearance; the other patient was a seafaring man, of a scorbutic taint, about fifty years of age, who, from an external injury which he had received many years ago, was afflicted with several inveterate and troublesome ulcers, extending from the ankle to the inner part of the calf, on the right leg.—By a strict attention to diet and regimen, and the external application of Augustura bark, in powder, by covering the ulcers completely, and renewing the dressings twice a day, the former patient was relieved in less than three weeks, while the ulcers of the latter did not show a disposition to heal and to cicatrize till he had used the powder for upwards of a month, so that in about six weeks they were completely healed.

Although two cases of this nature, imperfectly related, do not decide the value of a medicine, which is already, and more forcibly, recommended by great authorities; yet, Dr. Willich is of opinion, that the Augustura bark certainly deserves to be more frequently employed that it is at present; for it appears to be almost entirely neglected or forgotten. Perhaps this may be ascribed to the circumstance, that it has, like most other powerful remedies, within these few years been converted into a kind of nostrum—a quack-medicine—which could not fail to be frequently misused, or misapplied, by the ignorant multitude.

### Miscellaneous Facts and Remarks.

In consequence of a hint given in our first Number, p. 83, respecting Dr. Archer's successful method of curing the croup, by means of the seneka-toot, we have lately received a letter from Mr. T. PURTON of Alcester.

After

After having observed that his paper on the causes and cure of that disease, lately published in the Gentleman's Magazine, is sufficiently explicit and correct, the author has favoured us with the following remarks :

" The causes which produce croup and thoracic inflammation, either partial or general, appear to me to be one and the same. Inflammation is generally of the phlegmonous kind, attacking those habits particularly, who possess an inflammatory diathesis: and, therefore, the main object, which every practitioner should have in view, is, to reduce the inflammation as speedily as possible, before the exudation of the coagulable lymph take place; for, when once the membrane is formed, I should think there will be very little chance of the patient's recovery. I had one patient only who got well, and that I thought in rather a miraculous manner. I then gave a very strong emetic solution, which brought up a quantity ofropy matter, and with excessive struggling, portions of membrane, nearly of the tenacity of the cuticle.

" Children, after they once become affected with this terrible complaint, are very liable to second attacks, whenever they catch cold, but the succeeding ones are generally less violent. I should conceive this took place upon the principle of habit, as all parts once affected with this violent disease, are certainly more open to future attacks than those which have never been affected.

" If the seneka acts as an emetic, or otherwise by its stimulus, upon the top of the trachea, so as to throw up the coagulated lymph, it may certainly sometimes cure; as nothing there but mechanical means can possibly effect a cure;—but if I may presume to give my opinion, it would be, that ninety-nine patients out of one hundred would die, or even a much greater proportion, if we imprudently waited, or were not called in, till the child was in the last stage of the disease."

The *Aqua Lauri-cerasi* has formerly been recommended by medical writers on the continent, as an excellent remedy (in the phrase of the humoral pathologists) for attenuating viscous blood, and resolving humours in a stagnant state, without occasioning preternatural heat, or flushings. Dr. THILENIUS has lately called the attention of practitioners to this powerful remedy, which, he says, in his ' Medical and Chirurgical Remarks,' is eminently calculated to resolve thick black blood stagnating in the vessels and almost deprived of its serum. He prescribed from forty to fifty or sixty drops of this medicine, to be taken from three to four times a day, with evident success, in cases of hypochondriasis, melancholy, mania, the blind hæmorrhoids, or suppression of the menses, obstruction of the liver, &c. provided they originated from an undue consistence of the blood. It had the effect of changing the black and heterogenous mass of the blood, so that it, after using the remedy from fourteen to twenty-four days, acquired a more florid colour, became of a thinner consistence, and afforded the due proportion of serum. The dose of the distilled laurel-berry water was, in some instances, increased to eighty drops and upwards. Dr. Thilenius also occasionally, and with singular advantage, added a few drachms of it to the emollient clysters prescribed for his patients.

The *Magisterium Bismuthi*, which was first recommended by Dr. ODER, about the year 1786, appears to be either neglected or forgotten, although it is stated to be a powerful remedy in spasmodic pains of the stomach and bowels, particularly if it arise from organic debility or a relaxed and emaciated constitution. One of our correspondents affirms, that he has lately prescribed

prescribed it in two or three cases of the above nature, not only with apparent, but with permanent good effect, inasmuch that the cramp of the stomach, which had usually returned once or twice in the month, did not trouble his patients for six and twelve months together. He gave at first one grain of this metallic calx every half hour, for three or four times, which generally relieved the pain; but, on a second return of the cramp, he either gave a grain every quarter of an hour, with half a grain of opium, or, if the pain was not intense, a grain and a half of the bismuth every hour, without opium. In one case, four grains of the calx afforded no relief, till two more grains were given for a dose, with one grain and a half of opium, which effectually relieved the patient; so that the greatest quantity of the bismuth taken in one paroxysm, at repeated doses, did not exceed six grains.

If the magistery of bismuth could be obtained in a perfectly pure state, that is, free from all particles of lead or arsenic, which are not unfrequently combined with that semi-metal, we should not hesitate to direct even larger doses to be given, at proper intervals: but, as we are already possessed of a very excellent and powerful antispasmodic of a similar nature, the *floris zinci*, it remains to be decided which of the two deserves the preference.

In our second Number, p. 189, we communicated an account of Dr. Mitchell's method of applying topically, the *carbonat of potash*, for the cure of *venereal ulcerations*, with surprising expedition. We have since been informed by several of our medical friends in the metropolis, that they have observed similar good effects from the use of alkali, particularly in cases of chancres. In the course of our researches in foreign medical Journals, we found that the *caustic vegetable alkali* (according to the "*Medical and Chirurgical Gazette*, published by Dr. Hartenkeil, of Salzburgh, No. 61, for 1792) has, even prior to that period, been employed by German practitioners, in the cure of gonorrhoea. The reviewer of Dr. Graßmeyer's method of ascertaining the difference between pus and mucus, coincides in opinion with Dr. G. that the caustic vegetable alkali changes pus into a tough matter which may be drawn in threads. He endeavours to explain the *modus agendi* of the alkali by the following proposition: "That, if the matter discharged in gonorrhoea, which is not essentially different from pus, be inspissated, it is then likewise deprived of its acrimony, becomes milder or less stimulant, and consequently will no longer support the inflammation: this, as the principal symptom of the disease, gradually subsiding, and the exciting cause ceasing to operate, the subsequent effect is obvious."

In the "*Magazine for improving the Theory and Practice of Medicine and Surgery*," No. I. of Vol. I. published by Dr. Weikardt, of Heilbronn, who dedicates his periodical labours to the favourers as well as the opponents of the Brunonian doctrine, we met with a new mode of treating the *venereal disease*, as practised in Hindostan. The whole secret consists of a mixture of *arsenic* with the *ashes of the cedar*. We regret that we cannot state the proportion of this mixture, the doses in which it is taken, or the particular stages of lues in which it has been found effectual.

In the same Number, Dr. Weikardt has inserted an Essay, "On the method of distinguishing the prevalence of the sthenic from the asthenic state in diseases;" a subject of the first importance to a Brunonian. On a future occasion, perhaps, we may lay before our readers the substance of this essay, to enable them to decide, how far Dr. W. has fulfilled the duty which he assigned to himself by engaging in this arduous task.

MEDICAL

## MEDICAL AND PHYSICAL INTELLIGENCE,

(Original and Selected.)

WHILE some of our European, as well as transatlantic chemists, are still disputing on the nature and properties of *phlogiston* and *caloric*, Professor WERNER, of Gießen, in his work, "*On Etiology*," and "*The Journal for propagating Truth*," has lately endeavoured to prove that, according to his peculiar philosophic system, and from an analytical inquiry into the nature of our senses, there exists neither matter of heat, caloric, nor matter of light, *lumière*; although our naturalists and philosophers have bestowed much time and great attention, on these elementary substances.

In the 88th number of the '*Annales de Chimie*,' the ingenious VAUQUEZ, LIZ has inserted a paper '*On the Excrement of Fowls, compared with their Nourishment*;' with some Observations on the Formation of the Egg.' He found in the ashes of the oat-grain, *silice* and phosphat of lime. Mr. DAVY observes on this occasion, that he has not yet had time to examine any grains or seeds, but it is more than probable that the *silice* exists in the epidermis of the oat-grain, and not in the farina. The husks of wheat and barley, as well as the seeds of grapes, and hard shells, and capsules of fruit, will, he has no doubt, be found to contain flint. *Ibid.*

In consequence of the former experiments made by Professor LOWITZ, M. DEVAUZ, of Peterburgh, communicates the following simple process for freeing molasses from their sharp taste: To 24lb. of molasses, let 24lb. of pure water be added, together with 6lb. of charcoal in coarse powder, and let the whole be boiled for half an hour over a moderate fire. This mixture is then to be poured into a shallow vessel, where the charcoal will subside to the bottom: and, after the liquid has been poured off, it is again exposed to the action of heat, so that the superfluous water may evaporate and the molasses be reduced to its former consistence. By this process the molasses becomes much milder, and is rendered fit for various culinary uses.

Professor TROMMSDORFF, in a letter to VAN MONS, observes, that one of his friends has discovered *calcareous earth in a crystallized state*, in the form of fine needles. This discovery the Professor considers as a further support of his late proposal, for classing that earth among alkaline bodies.

M. KLIPSTEIN, has lately analysed a species of *quartz*, of a violet colour, found at Obenwalde, in Germany: it contained 0.40 of *silice*, 0.53 of *alumine*, 0.03 of *magnesia*, and 0.05 of *oxyd of iron*.

In combining, by digestion, either with the red oxyd of iron, TROMMSDORFF observed, that the oxyd was dissolved, and a *martial ether* readily obtained. This is shorter and more certain than the former method (of dissolving the iron filings first in sulphuric acid, evaporating the solution, then re-dissolving the crystals *per deliquium*, and afterwards mixing the fluid with equal proportions of alcohol and vitriolic ether), and consequently deserves to be adopted in the practice of pharmacy.—*Ibid.*

The same Professor has again made a great number of experiments, with a view to reduce *zircon*, but they have all been unsuccessful; and he is consequently of opinion that this substance ought to retain its place among the earths. The prussiat of potash, contrary to the supposition of the celebrated VAUQUEZ, does not precipitate *zircon*, though in a pure state.

The *zoenic acid* will probably lose its former particular rank assigned to it by the classification of *Berthollet* (namely that of partaking both of animal and vegetable nature). *Tromsdorff* says, that he has much reason to

